QUIZZES

Practice Test No. 1

5 Questions

5 min

Topics

Coulomb's law

Start Quiz

04 : 59

USAMA SOHAIL

Q 1/5 5 min Hint

Q : Two charges 1 μC and 5 μC separated by 20 cm, the ratio of electric forces acting on them will be:

A 1 : 2

B 1:5

C 1:1

D 5:1

04 : 57

USAMA SOHAIL

Q 2/5 5 min Hint

Q : The force in a medium of relative permittivity ε_r is given by

A $F' = \frac{F}{\varepsilon_r}$

B $F' = \frac{\varepsilon_r}{F}$

C $F' = \varepsilon_r . F$

D $F' = \frac{F}{\varepsilon_0 \varepsilon_r}$

1 2 3 4 5

04 : 56

USAMA SOHAIL

Q 3/5 5 min Hint

Q : The electric force between two charges placed in air is 2 N. When placed in a medium of $\varepsilon_r = 80$, the force reduced to:

A 0.029 N

B 0.025 N

C 0.03 N

D 0.04 N

1 2 3 4 5

Q 4/5 5 min Hint

Q : The relative permittivity of air is:

A 97.5

B 1.006

C 1.06

D 1.0006

04 : 52

USAMA SOHAIL

Q 5/5 5 min Hint

Q : The force between two similar unit charges placed one meter a part in air is

A zero

B one newton

C $9\times10^{9}N$

D $9\times10^{-9}N$

1 2 3 4 5

Correct

Unattempted

Incorrect

Q 1/5

Q : Two charges 1 μC and 5 μC separated by 20 cm, the ratio of electric forces acting on them will be:

A 1 : 2

B 1:5

C 1:1

D 5:1

Explanation

According Newton's third law, $F_{12} = F_{21}$

Correct

Unattempted

Incorrect

Q 2/5

Q : The force in a medium of relative permittivity ε_r is given by

A $F' = \frac{F}{\varepsilon_r}$

B $F' = \frac{\varepsilon_r}{F}$

C $F' = \varepsilon_r . F$

D $F' = \frac{F}{\varepsilon_o \varepsilon_r}$

Explanation

$$F_{med} = \frac{F_{vacc}}{\varepsilon_r}$$

Correct

Unattempted

Incorrect

Q 3/5

Q : The electric force between two charges placed in air is 2 N. When placed in a medium of $\varepsilon_r = 80$, the force reduced to:

A 0.029 N

B 0.025 N

C 0.03 N

D 0.04 N

Explanation

$$F_{med} = \frac{F_{vacc}}{\varepsilon_r} = \frac{2}{80} = 0.025N$$

Practice Test No. 1

Correct
Unattempted
Incorrect
Q 4/5

Q : The relative permittivity of air is:

A 97.5

B 1.006

C 1.06

D 1.0006

Explanation

$\varepsilon_r = 1.0006$

Correct

Unattempted

Incorrect

Q 5/5

Q : The force between two similar unit charges placed one meter a part in air is

A zero

B one newton

C $9 \times 10^9 N$

D $9 \times 10^{-9} N$

Explanation

$$F = k\frac{q_1 q_2}{r^2} = k\frac{(1)(1)}{1} = k$$

$$F = 9 \times 10^9 N$$

QUIZZES

Practice Test No. 2

5 Questions

5 min

Topics

Fields of Force

Start Quiz

Q 1/5 5 min Hint

Q : The force experience by unit positive charge placed at a point in an electric field is called:

A Coulomb's force

B Faraday's force

C Lorentz's force

D Electric field intensity

Q : A charge of 2 coulomb is in a field of intensity 2 N/C. The force on charge is:

A $4\pi N$

B 4 N

C 0 N

D 1 N

04 : 52

Q 3/5

5 min

Hint

Q : An electric field cannot deflect:

A X-rays

B $\alpha-particles$

C $\beta-particles$

D none of these

1 2 3 4 5

04 : 49

USAMA SOHAIL

Q 4/5 5 min Hint

Q : When a dielectric is placed in an electric field, it is:

A change

B polarized

C remains unchanged

D none of these

04 : 46

USAMA SOHAIL

5/5 5 min Hint

Q : A charge of 1 μC experiences a force of 10^{-6} N at a point then the electric intensity at that point is

A $10^{6} NC^{-1}$

B $10^{-6} NC^{-1}$

C $10^{-12} NC^{-1}$

D $1 NC^{-1}$

1 2 3 4 5

Correct

Unattempted

Incorrect

Q 1/5

Q : The force experience by unit positive charge placed at a point in an electric field is called:

A Coulomb's force

B Faraday's force

C Lorentz's force

D Electric field intensity

Explanation

Definition.

Correct

Unattempted

Incorrect

Q 2/5

Q : A charge of 2 coulomb is in a field of intensity 2 N/C. The force on charge is:

A $4\pi N$

B 4 N

C 0 N

D 1 N

Explanation

$$E=\frac{F}{q}\Rightarrow F=qE=2\times 2=4N$$

Correct

Unattempted

Incorrect

Q 3/5

Q : An electric field cannot deflect:

A X-rays

B $\alpha -$ particles

C $\beta -$ particles

D none of these

Explanation

For X-rays $(q = 0)$, $F = qE = (0)E = 0$

Correct Unattempted

Incorrect Q 4/5

Q : When a dielectric is placed in an electric field, it is:

A change

B polarized

C remains unchanged

D none of these

Correct

Unattempted

Incorrect

Q 5/5

Q : A charge of 1 μC experiences a force of 10^{-6} N at a point then the electric intensity at that point is

A $10^{6} NC^{-1}$

B $10^{-6} NC^{-1}$

C $10^{-12} NC^{-1}$

D $1 NC^{-1}$

Explanation

$$E = \frac{F}{q} = \frac{10^{-6}}{10^{-6}} = 1NC^{-1}$$

QUIZZES

Practice Test No. 3

5 Questions

5 min

Topics

Electric Field Lines

Start Quiz

04 : 58

Q 1/5 | 5 min | Hint

Q : The electric field created by positive charge is

A radially outward

B radially inward

C circular

D zero

04 : 39

Q 3/5 5 min Hint

Q : Michael Faraday was known by his work on:

A electric force

B weak nuclear force

C strong nuclear force

D gravitational force

04 : 36

Q 4/5 5 min Hint

Q : In case of two identical charges placed at certain distance, the electric force are:

A curved

B straight lines

C both A and B

D none of these

Q 5/5 5 min Hint

Q : The electric field exist around:

A charges

B on the left side

C At the negative charge

D At the positive charge

Correct

Unattempted

Incorrect

Q 1/5

Q : The electric field created by positive charge is

A radially outward

B radially inward

C circular

D zero

Explanation

Behavior of positive charge electric field.

Practice Test No. 3

Correct

Unattempted

Incorrect

Q 2/5

Q : The concept of an electric field lines is introduced by:

A Coulomb

B Faraday

C Einstein

D Joseph Henry

Explanation

Information.

Practice Test No. 3

USAMA SOHAIL

Correct

Unattempted

Incorrect

Q 3/5

Q : Michael Faraday was known by his work on:

A electric force

B weak nuclear force

C strong nuclear force

D gravitational force

1 2 3 4 5

Practice Test No. 3

Correct

Unattempted

Incorrect

Q 4/5

Q : In case of two identical charges placed at certain distance, the electric force are:

A curved

B straight lines

C both A and B

D none of these

1 2 3 4 5

Practice Test No. 3

Correct
Unattempted
Incorrect
Q 5/5

Q : The electric field exist around:

A charges

B on the left side

C At the negative charge

D At the positive charge

Explanation

Intrinsic property of charge.

QUIZZES

Practice Test No. 4

5 Questions

5 min

Topics

Application of Electroststics, Photocopier, Inkjet Printers

Start Quiz

04 : 58

USAMA SOHAIL

Q 1/5 — 5 min — Hint

Q : The practical application of electrostatic is:

A photocopier

B X-rays machines

C laser

D all of above

1 2 3 4 5

04 : 57

USAMA SOHAIL

Q 2/5 5 min Hint

Q : Photocopier and inkjet printer are the applications of

A magnetism

B electricity

C electro magnetism

D electrostatics

1 2 3 4 5

Q 3/5 5 min Hint

Q : One of the practical application of electro static induction is:

A laser

B X-rays machine

C photo copier

D Wilson cloud chamber

04 : 53

Q 4/5 5 min Hint

Q : The toner of the printer is given:

A positive charge

B negative charge

C neutral

D first positive then negative

1 2 3 4 5

04 : 52

USAMA SOHAIL

Q 5/5 | 5 min | Hint

Q : An inkjet printer uses ________ in its operation

A positrons

B neutrons

C an electric charge

D photons

Practice Test No. 4

Correct

Unattempted

Incorrect

Q 1/5

Q : The practical application of electrostatic is:

A photocopier

B X-rays machines

C laser

D all of above

1 2 3 4 5

Practice Test No. 4

Correct

Unattempted

Incorrect

Q 2/5

Q : Photocopier and inkjet printer are the applications of

A magnetism

B electricity

C electro magnetism

D electrostatics

Practice Test No. 4

Correct

Unattempted

Incorrect

Q 3/5

Q : One of the practical application of electro static induction is:

A laser

B X-rays machine

C photo copier

D Wilson cloud chamber

Explanation

Photocopier and inkjet are application of electrostatics.

Correct
Unattempted
Incorrect
Q 4/5

Q : The toner of the printer is given:

A positive charge

B negative charge

C neutral

D first positive then negative

Explanation

Dry powder having negative charge.

Practice Test No. 4

Correct

Unattempted

Incorrect

Q 5/5

Q : An inkjet printer uses ________ in its operation

A positrons

B neutrons

C an electric charge

D photons

QUIZZES

Practice Test No. 5

5 Questions

5 min

Topics

Electric Flux

Start Quiz

04 : 59

USAMA SOHAIL

Q 1/5 | 5 min | Hint

Q : What does Nm^2C^{-1} stand for quantity?

A electric field

B electric potential

C electric flux

D electric force

1 2 3 4 5

04 : 58

USAMA SOHAIL

Q 2/5 5 min Hint

Q : The flux through any closed surface will be maximum, if its surface makes angle with the electric field of

A 0^o

B 90^o

C 180^o

D 45^o

04 : 56

USAMA SOHAIL

Q 3/5 | 5 min | Hint

Q : When vector area is parallel to electric intensity, the electric flux is

A maximum

B minimum

C zero

D constant

1 2 3 4 5

04 : 54

USAMA SOHAIL

Q 4/5 5 min Hint

Q : The number of electric field lines passing through a certain element of area is called:

A Electric lines of force

B electric intensity

C electric flux

D none of these

1 2 3 4 5

04 : 52

Q 5/5 5 min Hint

Q : The electric flux through any surface depends upon:

A area of surface

B direction of surface

C electric intensity

D both A and B

1 2 3 4 5

Practice Test No. 5

Correct

Unattempted

Incorrect

Q

1/5

Q : What does Nm^2C^{-1} stand for quantity?

A electric field

B electric potential

C electric flux

D electric force

1 2 3 4 5

Correct

Unattempted

Incorrect

Q 2/5

Q : The flux through any closed surface will be maximum, if its surface makes angle with the electric field of

A 0°

B 90°

C 180°

D 45°

Explanation

For perpendicular, placed surface flux is maximum.

Correct

Unattempted

Incorrect

Q 3/5

Q : When vector area is parallel to electric intensity, the electric flux is

A maximum

B minimum

C zero

D constant

Explanation

$\phi = EA\cos^{\circ} = EA$

Correct
Unattempted
Incorrect
Q 4/5

Q : The number of electric field lines passing through a certain element of area is called:

A Electric lines of force

B electric intensity

C electric flux

D none of these

Explanation

Definition.

Correct

Unattempted

Incorrect

Q 5/5

Q : The electric flux through any surface depends upon:

A area of surface

B direction of surface

C electric intensity

D both A and B

Explanation

$\phi_e = \vec{E}.\vec{A}$

QUIZZES

Practice Test No. 6

3 Questions

5 min

Topics

Electric Flux through a surface enclosing a charge

Start Quiz

04 : 58

Q 1/3 5 min Hint

Q : Electric flux through a closed surface does not depend upon

A its shape

B medium

C charge

D none of these

1 2 3

04 : 57

USAMA SOHAIL

Q 2/3 5 min Hint

Q : Total flux through a closed surface depends on:

A shape of surface

B charge enclosed only

C medium only

D charge and medium

1 2 3

04 : 56

USAMA SOHAIL

Q 3/3 5 min Hint

Q : The surface charge density is defined as:

A charge per unit volume

B charge per unit mass

C mass per unit area

D charge per unit area

1 2 3

Correct

Unattempted

Incorrect

Q 1/3

Q : Electric flux through a closed surface does not depend upon

A its shape

B medium

C charge

D none of these

Explanation

Electric flux depend upon charge and medium.

Correct

Unattempted

Incorrect

Q 2/3

Q : Total flux through a closed surface depends on:

A shape of surface

B charge enclosed only

C medium only

D charge and medium

Explanation

$$\phi_e = \frac{q}{\varepsilon_o}$$

Correct

Unattempted

Incorrect

Q 3/3

Q : The surface charge density is defined as:

A charge per unit volume

B charge per unit mass

C mass per unit area

D charge per unit area

QUIZZES

Practice Test No. 7

5 Questions

5 min

Topics

Guass's Law

Start Quiz

04 : 58

USAMA SOHAIL

Q 1/5 5 min Hint

Q : Gauss's law is applied to calculate the

A electric intensity due to different charge configuration

B electric intensity due to negative charges only

C electric intensity due to positive charges only

D none of these

1 2 3 4 5

04 : 57

USAMA SOHAIL

Q 2/5 | 5 min | Hint

Q : Gaussian surface is a

A imaginary surface

B an open surface

C curved surface

D plane surface

1 2 3 4 5

04 : 55

USAMA SOHAIL

Q 3/5 5 min Hint

Q : The total number of lines of force passing out of any closed surface is equal to:

A $4\pi\epsilon_o$

B $\frac{1}{4\pi\epsilon_o}$

C $\frac{1}{\epsilon_o}\times Q$

D $\frac{1}{\epsilon_o Q}$

1 2 3 4 5

04 : 54

USAMA SOHAIL

Q 4/5 5 min Hint

Q : Gauss's law can only be applied to:

A surface of any shape

B plane surface

C closed surface

D a curved surface

1 2 3 4 5

04 : 52

USAMA SOHAIL

Q 5/5 5 min Hint

Q : According to Gauss's law $\phi_e \times \varepsilon_o$ is equal to

A charge

B electric intensity

C force

D none

1 2 3 4 5

Correct

Unattempted

Incorrect

Q 1/5

Q : Gauss's law is applied to calculate the

A electric intensity due to different charge configuration

B electric intensity due to negative charges only

C electric intensity due to positive charges only

D none of these

Explanation

Gauss's law is used to find electric intensity.

Correct

Unattempted

Incorrect

Q 2/5

Q : Gaussian surface is a

A imaginary surface

B an open surface

C curved surface

D plane surface

Explanation

Imaginary surface around charge.

Correct

Unattempted

Incorrect

Q 3/5

Q : The total number of lines of force passing out of any closed surface is equal to:

A $4\pi\epsilon_o$

B $\frac{1}{4\pi\epsilon_o}$

C $\frac{1}{\epsilon_o}\times Q$

D $\frac{1}{\epsilon_o Q}$

Explanation

$\phi_e = \frac{Q}{\varepsilon_o}$

Correct
Unattempted
Incorrect
Q 4/5

Q : Gauss's law can only be applied to:

A surface of any shape

B plane surface

C closed surface

D a curved surface

Explanation

Condition of Gauss's law.

Correct

Unattempted

Incorrect

Q 5/5

Q : According to Gauss's law $\phi_e \times \varepsilon_o$ is equal to

A charge

B electric intensity

C force

D none

Explanation

$\phi_e = \frac{Q}{\varepsilon_o}$

$\phi_e \times \varepsilon_o = Q$

QUIZZES

Practice Test No. 8

5 Questions

5 min

Topics

Applications of Guass's Law, Intensity of Field inside a hollow charged sphere, Electric intensity due to an infinite sheet of charge, Electric intensity between two oppositely charged parallel plates

Start Quiz

04 : 58

USAMA SOHAIL

Q 1/5 5 min Hint

Q : If $\vec{E} = \frac{\sigma}{2\epsilon_o}\hat{r}$, the unit vector $\hat{r}$ is:

A shows the direction of electric intensity

B directed from negative to positive plate

C directed towards the positive plate

D none of these

1 2 3 4 5

04 : 57

USAMA SOHAIL

Q 2/5 5 min Hint

Q : The interior of a hollow charged metal sphere is a region which is:

A full of electric field lines

B field free region

C both A and B

D none of these

1 2 3 4 5

04 : 55

USAMA SOHAIL

Q 3/5 5 min Hint

Q : A charged conductor has charge on its:

A inner surface

B outer surface

C middle point

D surrounding space

1 2 3 4 5

04 : 54

USAMA SOHAIL

Q 4/5 5 min Hint

Q :

If σ is the surfce charge denstiy and A is the area of Gaussian surface then charge enclosed by it is:

A $\frac{A}{\sigma}$

B $\frac{\sigma}{A}$

C σA

D $\sigma - A$

1 2 3 4 5

Q : $\vec{E} = \dfrac{\sigma}{\varepsilon_o}\hat{r}$ in this formula $\hat{r}$ is

A unit vector directed from positive to negative plate

B unit vector directed from negative to positive plate

C vector directed from positive to negative plate

D vector directed from negative to positive plate

Correct

Unattempted

Incorrect

Q 1/5

Q : If $\vec{E} = \frac{\sigma}{2\epsilon_o}\hat{r}$, the unit vector $\hat{r}$ is:

A shows the direction of electric intensity

B directed from negative to positive plate

C directed towards the positive plate

D none of these

Explanation

$\frac{\sigma}{2\varepsilon_o}$ is magnitude, $\hat{r}$ represent direction.

Correct

Unattempted

Incorrect

Q 2/5

Q : The interior of a hollow charged metal sphere is a region which is:

A full of electric field lines

B field free region

C both A and B

D none of these

Explanation

Inside q = 0 so E = 0

Correct

Unattempted

Incorrect

Q 3/5

Q : A charged conductor has charge on its:

A inner surface

B outer surface

C middle point

D surrounding space

Explanation

Charge on the body of sphere.

Correct

Unattempted

Incorrect

Q 4/5

Q :

If σ is the surfce charge denstiy and A is the area of Gaussian surface then charge enclosed by it is:

A $\frac{A}{\sigma}$

B $\frac{\sigma}{A}$

C σA

D $\sigma - A$

Correct

Unattempted

Incorrect

Q 5/5

Q : $\vec{E} = \frac{\sigma}{\varepsilon_0}\hat{r}$ in this formula $\hat{r}$ is

A unit vector directed from positive to negative plate

B unit vector directed from negative to positive plate

C vector directed from positive to negative plate

D vector directed from negative to positive plate

QUIZZES

Practice Test No. 9

5 Questions

5 min

Topics

Electric Potential, Electric Field as Potential Gradient, Electric Potential at a point due to a point charge

Start Quiz

QUIZZES

Practice Test No. 9

5 Questions

5 min

Topics

Electric Potential, Electric Field as Potential Gradient, Electric Potential at a point due to a point charge

Start Quiz

Q : In relation $E = -\frac{\Delta V}{\Delta r}$ then negative sign indicate that the direction of E is along the

A increasing potential

B decreasing potential

C zero potential

D none of these

04 : 57

USAMA SOHAIL

Q 2/5 5 min Hint

Q : The general expression for electric potential V_r at a distance r from q is

A $V_r = 4\pi\epsilon_o \frac{q}{r}$

B $V_r = \frac{1}{k}\frac{q}{r}$

C $V_r = k\frac{q}{r}$

D $V_r = \frac{1}{4\pi\epsilon_o}\frac{r}{q}$

1 2 3 4 5

04 : 55

Q 3/5

5 min

Hint

Q : Coulomb multiplied by volt gives the unit called:

A Ohm

B Bolt

C Ampere

D Joule

1 2 3 4 5

04 : 53

USAMA SOHAIL

Q 4/5 5 min Hint

Q : Which of the following units is different from the other?

A electron-volt

B Watt-hour

C joule

D volt

1 2 3 4 5

04 : 52

USAMA SOHAIL

Q 5/5 | 5 min | Hint

Q : Unit of electric intensity other than NC^{-1}

A V/A

B m/V

C V/m

D V/C

1 2 3 4 5

Correct

Unattempted

Incorrect

Q 1/5

Q : In relation $E = -\frac{\Delta V}{\Delta r}$ then negative sign indicate that the direction of E is along the

A increasing potential

B decreasing potential

C zero potential

D none of these

Explanation

Negative sign indicate, electric potential decrease in the direction of electric field.

Correct

Unattempted

Incorrect

Q 2/5

Q : The general expression for electric potential V_r at a distance r from q is

A $V_r = 4\pi \epsilon_o \frac{q}{r}$

B $V_r = \frac{1}{k} \frac{q}{r}$

C $V_r = k\frac{q}{r}$

D $V_r = \frac{1}{4\pi \epsilon_o} \frac{r}{q}$

Explanation

Formula.

Correct

Unattempted

Incorrect

Q 3/5

Q : Coulomb multiplied by volt gives the unit called:

A Ohm

B Bolt

C Ampere

D Joule

Explanation

$$V = \frac{W}{q} \Rightarrow W = q \times V = J = V \times C$$

Correct

Unattempted

Incorrect

Q 4/5

Q : Which of the following units is different from the other?

A electron-volt

B Watt-hour

C joule

D volt

Explanation

Electron-volt, watt-hour and Joule is unit of energy.

Practice Test No. 9

USAMA SOHAIL

Correct

Unattempted

Incorrect

Q 5/5

Q : Unit of electric intensity other than NC^{-1}

A V/A

B m/V

C V/m

D V/C

1 2 3 4 5

QUIZZES

Practice Test No. 10

5 Questions

5 min

Topics

Electron volt , Comparison of Gravitational and Electric Forces

Start Quiz

04 : 59

USAMA SOHAIL

Q 1/5 5 min Hint

Q : A particle carrying a charge of 2e falls through potential difference of 3V. Energy acquired by it is:

A 9.6×10^{-16} J

B 9.6×10^{-20} J

C 9.6×10^{-15} J

D 9.6×10^{-19} J

04 : 57

USAMA SOHAIL

Q 2/5 5 min Hint

Q : 1 Joule = ________

A 6.25×10^{18} eV

B 6.25×10^{-18} eV

C 6.25×10^{-19} eV

D 6.25×10^{-31} eV

1 2 3 4 5

04 : 56

USAMA SOHAIL

Q 3/5 5 min Hint

Q : Charge on an electron is:

A $1.6x10^{-19}C$

B $1.6x10^{+19}C$

C $9.1x10^{-19}C$

D $9.1x10^{-27}C$

1 2 3 4 5

04 : 54

USAMA SOHAIL

Q 4/5 5 min Hint

Q : A particle having 2e charge falls through a potential difference of 5V. Energy acquired by it is __________

A 2.5 eV

B 20 eV

C 0.4 eV

D 10 eV

1 2 3 4 5

04 : 52

USAMA SOHAIL

Q 5/5 5 min Hint

Q : Electron Volt is the unit of:

A potential

B potential difference

C electric current

D electric energy

1 2 3 4 5

Practice Test No. 10

USAMA SOHAIL

Correct

Unattempted

Incorrect

Q 1/5

Q : A particle carrying a charge of 2e falls through potential difference of 3V. Energy acquired by it is:

A 9.6×10^{-16} J

B 9.6×10^{-20} J

C 9.6×10^{-15} J

D 9.6×10^{-19} J

Explanation

$\Delta K.E = q\Delta V = (2\times 1.6\times 10^{-19})(3) = 9.6\times 10^{-19} J$

1 2 3 4 5

Correct

Unattempted

Incorrect

Q 2/5

Q : 1 Joule = ________

A 6.25×10^{18} eV

B 6.25×10^{-18} eV

C 6.25×10^{-19} eV

D 6.25×10^{-31} eV

Explanation

$1eV = 1.6 \times 10^{-19} J$

$1J = 6.25 \times 10^{18} eV$

Correct

Unattempted

Incorrect

Q 3/5

Q : Charge on an electron is:

A $1.6 \times 10^{-19} C$

B $1.6 \times 10^{+19} C$

C $9.1 \times 10^{-19} C$

D $9.1 \times 10^{-27} C$

Explanation

$1e = 1.6 \times 10^{-19} C$

Correct

Unattempted

Incorrect

Q 4/5

Q : A particle having 2e charge falls through a potential difference of 5V. Energy acquired by it is __________

A 2.5 eV

B 20 eV

C 0.4 eV

D 10 eV

Explanation

$\Delta K.E = \Delta V = (2e)(5V) = 10eV$

Correct

Unattempted

Incorrect

Q 5/5

Q : Electron Volt is the unit of:

A potential

B potential difference

C electric current

D electric energy

Explanation

$1eV = 1.6 \times 10^{-19} J$

QUIZZES

Practice Test No. 11

5 Questions

5 min

Topics

Charge on an Electron by Millikan's Method

Start Quiz

04 : 58

Q 1/5 5 min Hint

Q : Millikan and Fletcher could determine the charge on oil droplets in

A thermal equilibrium

B electrical equilibrium

C mechanical equilibrium

D unstable equilibrium

04 : 57

USAMA SOHAIL

Q 2/5 5 min Hint

Q : Electrostatic force is ______ force

A attractive

B repulsive force

C may be attractive or repulsive

D none of these

1 2 3 4 5

04 : 56

Q 3/5 | 5 min | Hint

Q : The charge on the electron was measured by Millikan in:

A 1909

B 1905

C 1900

D 1910

1 2 3 4 5

04 : 54

USAMA SOHAIL

Q 4/5 5 min Hint

Q : The smallest possible charge which a particle can have is:

A 0.2×10^{-19} C

B 0.8×10^{-19} C

C 1.6×10^{-19} C

D 3.2×10^{-19} C

04 : 52

Q 5/5 5 min Hint

Q : Millikan and Fletcher could determine the charge on oil droplets in

A thermal equilibrium

B electrical equilibrium

C mechanical equilibrium

D unstable equilibrium

1 2 3 4 5

Correct

Unattempted

Incorrect

Q 1/5

Q : Millikan and Fletcher could determine the charge on oil droplets in

A thermal equilibrium

B electrical equilibrium

C mechanical equilibrium

D unstable equilibrium

Explanation

$F_e = F_g$

Practice Test No. 11

Correct

Unattempted

Incorrect

Q 2/5

Q : Electrostatic force is ______ force

A attractive

B repulsive force

C may be attractive or repulsive

D none of these

Practice Test No. 11

Correct

Unattempted

Incorrect

Q 3/5

Q : The charge on the electron was measured by Millikan in:

A 1909

B 1905

C 1900

D 1910

Explanation

Information.

1 2 3 4 5

Correct

Unattempted

Incorrect

Q 4/5

Q : The smallest possible charge which a particle can have is:

A 0.2×10^{-19} C

B 0.8×10^{-19} C

C 1.6×10^{-19} C

D 3.2×10^{-19} C

Explanation

$q_{min} = C = 1.6 \times 10^{-19} C$

Practice Test No. 11

Correct

Unattempted

Incorrect

Q 5/5

Q : Millikan and Fletcher could determine the charge on oil droplets in

A thermal equilibrium

B electrical equilibrium

C mechanical equilibrium

D unstable equilibrium

1 2 3 4 5

QUIZZES

Practice Test No. 12

5 Questions

5 min

Topics

Capacitor

Start Quiz

04 : 53

USAMA SOHAIL

Q 1/5 | 5 min | Hint

Q : The formula for energy density is valid for only:

A at points of high field strength

B at points of low field strength

C at points of inter mediate field strength

D at all points

1 2 3 4 5

04 : 52

USAMA SOHAIL

Q 2/5 | 5 min | Hint

Q : Capacitor is a device used for:

A storing charge

B storing direct current

C storing alternating current

D storing voltage

1 2 3 4 5

04 : 50

Q 3/5 5 min Hint

Q : Farad is the unit of:

A capacitance

B conductance

C current

D electric flux

1 2 3 4 5

04 : 48

USAMA SOHAIL

Q 4/5 5 min Hint

Q : A capacitor's capacitance can be increased by:

A increasing the area

B decreasing the distance

C placing the dielectric

D all of above

1 2 3 4 5

Q : The circuit having combined components resistance and capacitor is called:

A R-L circuit

B R-C circuit

C R-L-C circuit

D R.I circuit

Correct

Unattempted

Incorrect

Q 1/5

Q : The formula for energy density is valid for only:

A at points of high field strength

B at points of low field strength

C at points of inter mediate field strength

D at all points

Correct Unattempted

Incorrect Q 2/5

Q : Capacitor is a device used for:

A storing charge

B storing direct current

C storing alternating current

D storing voltage

Explanation

Definition.

Correct

Unattempted

Incorrect

Q 3/5

Q : Farad is the unit of:

A capacitance

B conductance

C current

D electric flux

Explanation

$$C = \frac{Q}{V} \Rightarrow 1F = \frac{1C}{1V}$$

Correct

Unattempted

Incorrect

Q 4/5

Q : A capacitor's capacitance can be increased by:

A increasing the area

B decreasing the distance

C placing the dielectric

D all of above

Practice Test No. 12

Correct

Unattempted

Incorrect

Q 5/5

Q : The circuit having combined components resistance and capacitor is called:

A R-L circuit

B R-C circuit

C R-L-C circuit

D R.I circuit

QUIZZES

Practice Test No. 13

5 Questions

5 min

Topics

Capacitance of parallel plate capacitor

Start Quiz

04 : 59

USAMA SOHAIL

Q 1/5 5 min Hint

Q : Capacitance of a capacitor in vacuum is given by:

A $\frac{A\varepsilon_o}{d}$

B $\frac{A\varepsilon_r}{d}$

C $\frac{Ad}{\varepsilon_o}$

D $\frac{A}{\varepsilon_o d}$

Q 2/5 5 min Hint

Q : Capacitance of a capacitor does not depend upon:

A distance between plates

B area of plates

C electric field between plates

D medium between plates

04 : 55

USAMA SOHAIL

Q 3/5

5 min

Hint

Q : Capacitance of a capacitor does not depend upon:

A distance between plates

B area of plates

C electric field between plates

D medium between plates

1 2 3 4 5

04 : 53

USAMA SOHAIL

Q 4/5 5 min Hint

Q : Capacitance of parallel plate capacitor is:

A $\varepsilon_o d/A$

B $\varepsilon_o A/d$

C $A/\varepsilon_o d$

D $d/\varepsilon_o A$

04 : 52

Q 5/5 5 min Hint

Q : When dielectric is placed between the plates of capacitors, the value of Electric field between the plates

A increases

B zero

C decreases

D infinite

1 2 3 4 5

Correct

Unattempted

Incorrect

Q 1/5

Q : Capacitance of a capacitor in vacuum is given by:

A $\frac{A\varepsilon_o}{d}$

B $\frac{A\varepsilon_r}{d}$

C $\frac{Ad}{\varepsilon_o}$

D $\frac{A}{\varepsilon_o d}$

Explanation

Formula: $C = \frac{A\varepsilon_o}{d}$

Correct

Unattempted

Incorrect

Q 2/5

Q : Capacitance of a capacitor does not depend upon:

A distance between plates

B area of plates

C electric field between plates

D medium between plates

Explanation

$$C = \frac{A\varepsilon_o}{d}$$

Practice Test No. 13

USAMA SOHAIL

Correct

Unattempted

Incorrect

Q 3/5

Q : Capacitance of a capacitor does not depend upon:

A distance between plates

B area of plates

C electric field between plates

D medium between plates

Correct

Unattempted

Incorrect

Q 4/5

Q : Capacitance of parallel plate capacitor is:

A $\varepsilon_o d/A$

B $\varepsilon_o A/d$

C $A/\varepsilon_o d$

D $d/\varepsilon_o A$

Practice Test No. 13

USAMA SOHAIL

Correct

Unattempted

Incorrect

Q 5/5

Q : When dielectric is placed between the plates of capacitors, the value of Electric field between the plates

A increases

B zero

C decreases

D infinite

Explanation

Due to dielectric potential difference decrease, so $\downarrow E = \frac{V}{d} \uparrow$

QUIZZES

Practice Test No. 14

4 Questions

5 min

Topics

Electric Polarization of Dielectrics

Start Quiz

Q 1/4 5 min Hint

Q : Introduction of dielectric increase__________

A Electric field

B Potential difference

C Charge

D None

04 : 57

Q 2/4 5 min Hint

Q : Two equal and opposite charges separated by a small distance are said to be

A tripole

B polaroid

C monopole

D dipole

04 : 56

USAMA SOHAIL

Q 3/4 5 min Hint

Q : Under the action of electric field, molecules of a dielectric:

A begin to vibrate

B become electric dipole

C are ionized

D are charged

1 2 3 4

04 : 54

USAMA SOHAIL

Q 4/4 5 min Hint

Q : The increase in capacitance of a capacitor due to presence of dielectric is due to _____ dielectric.

A electric polarization

B electrification

C ionization

D electrolysis

1 2 3 4

Correct

Unattempted

Incorrect

Q 1/4

Q : Introduction of dielectric increase__________

A Electric field

B Potential difference

C Charge

D None

Explanation

$$C = \frac{Q}{V}$$

In case of dielectric

$$\uparrow C \propto \frac{1}{V\downarrow}$$

Correct

Unattempted

Incorrect

Q 2/4

Q : Two equal and opposite charges separated by a small distance are said to be

A tripole

B polaroid

C monopole

D dipole

Explanation

Definition of dipole.

Correct

Unattempted

Incorrect

Q 3/4

Q : Under the action of electric field, molecules of a dielectric:

A begin to vibrate

B become electric dipole

C are ionized

D are charged

Explanation

Two opposite charges small separation. make dipole.

Correct

Unattempted

Incorrect

Q 4/4

Q : The increase in capacitance of a capacitor due to presence of dielectric is due to _____ dielectric.

A electric polarization

B electrification

C ionization

D electrolysis

Explanation

Dipole concept.

QUIZZES

Practice Test No. 15

5 Questions

5 min

Topics

Energy stored in a capacitor, Charging and discharging of a capacitor

Start Quiz

04 : 59

USAMA SOHAIL

Q 1/5 5 min Hint

Q : Energy density in case of a capacitor is always proportional to

A E^2

B ε_o

C V^2

D C

04 : 57

USAMA SOHAIL

Q 2/5 5 min Hint

Q : When RC circuit is connected across a battery amount of charge deposited on plates is ....times the equilibrium charge after one time constant.

A 0.63

B 0.67

C 0.75

D 0.86

04 : 55

USAMA SOHAIL

Q 3/5 | 5 min | Hint

Q : If RC is small, then capacitor will be charged and discharged

A slowly

B with medium speed

C quickly

D A and C

1 2 3 4 5

04 : 54

USAMA SOHAIL

Q 4/5 5 min Hint

Q : Capacitance of capacitor is C, can store energy E than $\sqrt{\frac{2E}{C}}$ is equal to

A Q

B V

C W

D ε_o

1 2 3 4 5

04 : 52

USAMA SOHAIL

Q 5/5

5 min

Hint

Q : The product of resistance and capacitance is:

A velocity

B force

C acceleration

D time

1 2 3 4 5

Correct

Unattempted

Incorrect

Q 1/5

Q : Energy density in case of a capacitor is always proportional to

A E^2

B ε_o

C V^2

D C

Explanation

$$E' = \frac{1}{2}\varepsilon_r\varepsilon_o E^2$$

Correct

Unattempted

Incorrect

Q 2/5

Q : When RC circuit is connected across a battery amount of charge deposited on plates is ....times the equilibrium charge after one time constant.

A 0.63

B 0.67

C 0.75

D 0.86

Explanation

$q = 63\%\ of\ q_o = 0.63\, q_o$

Practice Test No. 15

USAMA SOHAIL

Correct

Unattempted

Incorrect

Q 3/5

Q : If RC is small, then capacitor will be charged and discharged

A slowly

B with medium speed

C quickly

D A and C

Explanation

$\downarrow t = (RC) \downarrow$

1 2 3 4 5

Correct

Unattempted

Incorrect

Q 4/5

Q : Capacitance of capacitor is C, can store energy E than $\sqrt{\frac{2E}{C}}$ is equal to

A Q

B V

C W

D ε_o

Explanation

$E = \frac{1}{2} CV^2$

Correct

Unattempted

Incorrect

Q 4/5

Q : Capacitance of capacitor is C, can store energy E than $\sqrt{\frac{2E}{C}}$ is equal to

A Q

B V

C W

D ε_o

Explanation

$$E = \frac{1}{2}CV^2$$

$$V^2 = \frac{2E}{C} \Rightarrow V = \sqrt{\frac{2E}{C}}$$

Correct

Unattempted

Incorrect

Q 5/5

Q : The product of resistance and capacitance is:

A velocity

B force

C acceleration

D time

Explanation

t = RC

QUIZZES

Practice Test No. 16

5 Questions

5 min

Topics

Electric Current, Electric current , Types of current , Current through a metallic conductor

Start Quiz

04 : 59

Q 1/5 | 5 min | Hint

Q : The charge carriers in metallic conductors are:

A free electrons

B electrons

C electrons and protons

D positive and negative ions

1 2 3 4 5

04 : 58

USAMA SOHAIL

Q 2/5 5 min Hint

Q : The average velocity gained by electrons is a conductor placed in an electric field is called:

A variable velocity

B uniform velocity

C drift velocity

D instantaneous velocity

1 2 3 4 5

04 : 56

USAMA SOHAIL

Q 3/5 5 min Hint

Q : The study of conduction of electricity through liquids is known as:

A electrolysis

B resistivity

C conductivity

D none of above

04 : 54

USAMA SOHAIL

Q 4/5 5 min Hint

Q : A battery move a charge of 40 C around a circuit at constant rate in 20 sec. The current will be:

A 2 A

B 0.5 A

C 80 A

D 800 A

04 : 52

USAMA SOHAIL

Q 5/5 5 min Hint

Q : The drift velocity of an electron in a conductor in the presence of electric field is of the order of

A $10^{-2} ms^{-1}$

B $10^{-3} ms^{-1}$

C $10^{-6} ms^{-1}$

D $10^{7} ms^{-1}$

Correct

Unattempted

Incorrect

Q 1/5

Q : The charge carriers in metallic conductors are:

A free electrons

B electrons

C electrons and protons

D positive and negative ions

Explanation

Charge carrier of metallic conductor.

Correct

Unattempted

Incorrect

Q 2/5

Q : The average velocity gained by electrons is a conductor placed in an electric field is called:

A variable velocity

B uniform velocity

C drift velocity

D instantaneous velocity

Explanation

Definition

Correct

Unattempted

Incorrect

Q 3/5

Q : The study of conduction of electricity through liquids is known as:

A electrolysis

B resistivity

C conductivity

D none of above

Correct

Unattempted

Incorrect

Q 4/5

Q : A battery move a charge of 40 C around a circuit at constant rate in 20 sec. The current will be:

A 2 A

B 0.5 A

C 80 A

D 800 A

Explanation

$I = \frac{Q}{t}$

← Practice Test No. 16 USAMA SOHAIL

Correct

Unattempted

Incorrect

Q 5/5

Q : The drift velocity of an electron in a conductor in the presence of electric field is of the order of

A $10^{-2} ms^{-1}$

B $10^{-3} ms^{-1}$

C $10^{-6} ms^{-1}$

D $10^{7} ms^{-1}$

Explanation

vaue of drift velocity

QUIZZES

Practice Test No. 17

5 Questions

5 min

Topics

Sources of Current

Start Quiz

04 : 59

USAMA SOHAIL

Q 1/5 | 5 min | Hint

Q : The thermistors convert changes of temperature into

A light energy

B electrical energy

C heat

D sound

1 2 3 4 5

04 : 57

USAMA SOHAIL

Q 2/5 | 5 min | Hint

Q : Thermo-couple convert___________ into electrical energy:

A heat energy

B nuclear energy

C mechanical energy

D chemical energy

04 : 54

USAMA SOHAIL

Q 3/5 5 min Hint

Q : In order to have a constant current through a wire, the potential difference across its ends should be:

A increasing

B decreasing

C zero

D maintained constant

Q : Conversion of chemical energy into electrical energy can be achieved by:

A solar cell

B photo voltaic cell

C dry cell

D none of these

Q 5/5 5 min Hint

Q : Electric generator is a device which convert mechanical energy into

A heat energy

B electrical energy

C elastic energy

D nuclear energy

Correct

Unattempted

Incorrect

Q 1/5

Q : The thermistors convert changes of temperature into

A light energy

B electrical energy

C heat

D sound

Explanation

$H.E \rightarrow E.E$

Correct

Unattempted

Incorrect

Q 2/5

Q : Thermo-couple convert__________ into electrical energy:

A heat energy

B nuclear energy

C mechanical energy

D chemical energy

Explanation

$H.E \rightarrow E.E$

Correct

Unattempted

Incorrect

Q 3/5

Q : In order to have a constant current through a wire, the potential difference across its ends should be:

A increasing

B decreasing

C zero

D maintained constant

Explanation

Charge move due to potential difference.

Correct

Unattempted

Incorrect

Q 4/5

Q : Conversion of chemical energy into electrical energy can be achieved by:

A solar cell

B photo voltaic cell

C dry cell

D none of these

Explanation

Cell: $C.E \rightarrow E.E$

Correct

Unattempted

Incorrect

Q 5/5

Q : Electric generator is a device which convert mechanical energy into

A heat energy

B electrical energy

C elastic energy

D nuclear energy

QUIZZES

Practice Test No. 18

5 Questions

5 min

Topics

Effects of current

Start Quiz

Q : When a potential difference of 4 volt is applied across resistance, 10J of energy is converted. Find charge flows:

A 0.20 C

B 2.5 C

C 5.0 C

D 10.0 C

04 : 57

USAMA SOHAIL

Q 2/5 5 min Hint

Q : The production of heat due to an electric current flowing through a conductor is given by:

A feed back effect

B Joule's effect

C compton effect

D photo electric effect

1 2 3 4 5

04 : 56

USAMA SOHAIL

Q 3/5 | 5 min | Hint

Q : Magnetic effect of current is used:

A to detect a current

B to measure a current

C in electric motor

D all of above

1 2 3 4 5

04 : 54

USAMA SOHAIL

Q 4/5 | 5 min | Hint

Q : Thermocouple converts heat energy into

A P.E

B K.E

C electrical energy

D electrical energy

1 2 3 4 5

04 : 53

USAMA SOHAIL

Q 4/5 5 min Hint

Q : Thermocouple converts heat energy into

A P.E

B K.E

C electrical energy

D electrical energy

1 2 3 4 5

04 : 51

Q 5/5 | 5 min | Hint

Q : The liquid which conducts electric current is called

A cathode

B anode

C electrolyte

D electrode

1 2 3 4 5

Practice Test No. 18

Correct
Unattempted
Incorrect
Q 1/5

Q : When a potential difference of 4 volt is applied across resistance, 10J of energy is converted. Find charge flows:

A 0.20 C

B 2.5 C

C 5.0 C

D 10.0 C

Correct

Unattempted

Incorrect

Q 2/5

Q : The production of heat due to an electric current flowing through a conductor is given by:

A feed back effect

B Joule's effect

C compton effect

D photo electric effect

Explanation

Joule's law

Correct

Unattempted

Incorrect

Q 3/5

Q : Magnetic effect of current is used:

A to detect a current

B to measure a current

C in electric motor

D all of above

Explanation

uses

Correct

Unattempted

Incorrect

Q 4/5

Q : Thermocouple converts heat energy into

A P.E

B K.E

C electrical energy

D electrical energy

Correct

Unattempted

Incorrect

Q 5/5

Q : The liquid which conducts electric current is called

A cathode

B anode

C electrolyte

D electrode

Explanation

Definition

QUIZZES

Practice Test No. 19

5 Questions

5 min

Topics

Ohm's Law, Series and parallel resistors

Start Quiz

04 : 58

USAMA SOHAIL

Q 1/5 | 5 min | Hint

Q : The graphical representation of Ohm's law is

A hyperbola

B ellipse

C parabola

D straight line

1 2 3 4 5

Q 2/5 5 min Hint

Q : If three resistors are connected parallel to each other then their equivalent resistance is:

A greater than larger individual resistance

B less than smaller individula resistance

C equal to larger value

D equal to smaller value

04 : 56

Q 3/5

5 min

Hint

Q : Ohm's law explain the behavior of current under the constant

A resistance.

B voltage

C current

D both a and b

04 : 54

USAMA SOHAIL

Q 4/5 5 min Hint

Q : Product of resistance and conductance is

A 1

B 0

C 100

D infinite

1 2 3 4 5

04 : 52

USAMA SOHAIL

Q 5/5 5 min Hint

Q : The smallest resistance obtained by connecting 50 resistance each of $\frac{1}{4}\Omega$ is

A 200Ω

B $\frac{1}{200}\Omega$

C $\frac{50}{4}\Omega$

D $\frac{4}{50}\Omega$

1 2 3 4 5

Correct

Unattempted

Incorrect

Q 1/5

Q : The graphical representation of Ohm's law is

A hyperbola

B ellipse

C parabola

D straight line

Explanation

$I-V$ graph

Correct

Unattempted

Incorrect

Q 2/5

Q : If three resistors are connected parallel to each other then their equivalent resistance is:

A greater than larger individual resistance

B less than smaller individula resistance

C equal to larger value

D equal to smaller value

Correct

Unattempted

Incorrect

Q 3/5

Q : Ohm's law explain the behavior of current under the constant

A resistance.

B voltage

C current

D both a and b

Explanation

$V \propto I \Rightarrow V = constant.\ \ I = RI = IR$

Practice Test No. 19

Correct

Unattempted

Incorrect

Q 4/5

Q : Product of resistance and conductance is

A 1

B 0

C 100

D infinite

1 2 3 4 5

Correct

Unattempted

Incorrect

Q 5/5

Q : The smallest resistance obtained by connecting 50 resistance each of $\frac{1}{4}\Omega$ is

A 200Ω

B $\frac{1}{200}\Omega$

C $\frac{50}{4}\Omega$

D $\frac{4}{50}\Omega$

QUIZZES

Practice Test No. 20

5 Questions

5 min

Topics

Resistivity and its dependance upon temperature

Start Quiz

04 : 59

USAMA SOHAIL

Q 1/5 5 min Hint

Q : The SI unit of resistivity is:

A Ohm-m

B Ohm-m^2

C Ohm-m^3

D Ohm

1 2 3 4 5

04 : 57

Q 2/5 5 min Hint

Q : The fractional change in resistivity per unit original resistivity per Kelvin in temperature is known as:

A temperature coefficient of resistance

B temperature coefficient of resistivity

C temperature coefficient of conductivity

D none of these

1 2 3 4 5

04 : 55

Q 3/5

5 min

Hint

Q : The conductance of a conductor increases when:

A its temperature increase

B it temperature decrease

C its length increases

D none these

1 2 3 4 5

04 : 54

USAMA SOHAIL

Q 4/5 | 5 min | Hint

Q : The SI unit of resistivity are

A Ohm-m^{-1}

B Ohm-m^{o}

C Ohm-m

D Ohm-m^{2}

1 2 3 4 5

04 : 52

USAMA SOHAIL

Q 5/5 5 min Hint

Q : The S.I unit of resistivity is;

A Ωm^{-2}

B Ωm^{-1}

C Ωm

D Ω

1 2 3 4 5

Practice Test No. 20

USAMA SOHAIL

Correct

Unattempted

Incorrect

Q 1/5

Q : The SI unit of resistivity is:

A Ohm-m

B Ohm-m^2

C Ohm-m^3

D Ohm

Explanation

$$\rho = \frac{RA}{L} \Rightarrow \frac{\Omega m^2}{m} = \Omega m$$

1 2 3 4 5

Correct

Unattempted

Incorrect

Q 2/5

Q : The fractional change in resistivity per unit original resistivity per Kelvin in temperature is known as:

A temperature coefficient of resistance

B temperature coefficient of resistivity

C temperature coefficient of conductivity

D none of these

Explanation

Definition

Correct
Unattempted
Incorrect
Q 3/5

Q : The conductance of a conductor increases when:

A its temperature increase

B it temperature decrease

C its length increases

D none these

Explanation

For conductor, $G \propto \frac{1}{T}$

Correct
Unattempted
Incorrect
Q 4/5

Q : The SI unit of resistivity are

A $Ohm\text{-}m^{-1}$

B $Ohm\text{-}m^{o}$

C Ohm-m

D $Ohm\text{-}m^{2}$

Correct

Unattempted

Incorrect

Q 5/5

Q : The S.I unit of resistivity is;

A Ωm^{-2}

B Ωm^{-1}

C Ωm

D Ω

QUIZZES

Practice Test No. 21

5 Questions

5 min

Topics

Rheostat, Colour code for carbon resistors, Rheostat ,Thermistor

Start Quiz

04 : 59

USAMA SOHAIL

Q 1/5 5 min Hint

Q : To use a rheostat as variable resistor, the terminals which are inserted in a circuit are:

A Fixed terminal A and sliding contact C

B Both fixed terminals A and B

C fixed terminal B and sliding contact C

D all of above

1 2 3 4 5

04 : 57

Q 2/5 5 min Hint

Q : Thermistors are prepared under:

A high pressure and high temperature

B high pressure and low temperature

C low pressure and low temperature

D none of these

1 2 3 4 5

04 : 56

USAMA SOHAIL

Q 3/5 | 5 min | Hint

Q :

Potential difference between the portion of wire is given by

A $\frac{V}{R} \times r$

B $\frac{r}{V} \times R$

C $\frac{R \times r}{V}$

D $\frac{VR}{r}$

04 : 54

USAMA SOHAIL

Q 4/5 5 min Hint

Q : If the resistance of 500Ω have fourth band of silver colour then its upper maximum resistance will be:

A 600Ω

B 550Ω

C 450Ω

D 400Ω

04 : 52

Q 5/5 | 5 min | Hint

Q :
Shapes of thermistor are

A Rod

B Bead

C Washer/disc

D All

1 2 3 4 5

Correct

Unattempted

Incorrect

Q 1/5

Q : To use a rheostat as variable resistor, the terminals which are inserted in a circuit are:

A Fixed terminal A and sliding contact C

B Both fixed terminals A and B

C fixed terminal B and sliding contact C

D all of above

Correct
Unattempted
Incorrect
Q 2/5

Q : Thermistors are prepared under:

A high pressure and high temperature

B high pressure and low temperature

C low pressure and low temperature

D none of these

Correct

Unattempted

Incorrect

Q 3/5

Q :

Potential difference between the portion of wire is given by

A $\frac{V}{R} \times r$

B $\frac{r}{V} \times R$

C $\frac{R \times r}{V}$

D $\frac{VR}{r}$

Explanation

Formula.

Practice Test No. 21

Correct

Unattempted

Incorrect

Q 4/5

Q : If the resistance of 500Ω have fourth band of silver colour then its upper maximum resistance will be:

A 600Ω

B 550Ω

C 450Ω

D 400Ω

Explanation

$R = 500 \pm 50\Omega$

Correct

Unattempted

Incorrect

Q 5/5

Q :
Shapes of thermistor are

A Rod

B Bead

C Washer/disc

D All

Explanation

Shapes

QUIZZES

Practice Test No. 22

5 Questions

5 min

Topics

Elecric power and power dissipation in resistor

Start Quiz

04 : 59

USAMA SOHAIL

Q 1/5 5 min Hint

Q : The loss of electrical energy per second is called:

A power dissipation

B energy dissipation

C work

D none of these

1 2 3 4 5

04 : 58

USAMA SOHAIL

Q 2/5

5 min

Hint

Q : The electrical power in mathematical form can be expressed as:

A $P = I^2R$

B P = V x I

C $P = \frac{V^2}{R}$

D all of above

04 : 56

USAMA SOHAIL

Q 3/5 5 min Hint

Q : which is not the equation for the power dissipation in a resistor is:

A $P = I^2R$

B $P = \frac{V^2}{R}$

C $P = IR$

D all of above

1 2 3 4 5

04 : 54

USAMA SOHAIL

Q 4/5 5 min Hint

Q : Which equation is used to define resistance?

A Energy = $(\text{current})^2 \times$ resistance × time

B potential difference = current × resistance

C power = $(\text{current})^2 \times$ resistance

D resistivity = resistance × area + length

04 : 53

USAMA SOHAIL

Q 5/5 5 min Hint

Q :
Electrical power is expressed as

A $V\frac{\Delta Q}{\Delta t}$

B $\frac{t}{W}$

C $\frac{V}{t}$

D $\frac{\Delta Q}{V\Delta t}$

Correct

Unattempted

Incorrect

Q 1/5

Q : The loss of electrical energy per second is called:

A power dissipation

B energy dissipation

C work

D none of these

Explanation

Definition.

Correct

Unattempted

Incorrect

Q 2/5

Q : The electrical power in mathematical form can be expressed as:

A $P = I^2R$

B P = V x I

C $P = \frac{V^2}{R}$

D all of above

Explanation

Formula.

Practice Test No. 22

USAMA SOHAIL

Correct

Unattempted

Incorrect

Q 3/5

Q : The loss of electrical energy per second is called:

A $P = I^2R$

B $P = \frac{V^2}{R}$

C $P = IR$

D all of above

1 2 3 4 5

Practice Test No. 22

USAMA SOHAIL

Correct

Unattempted

Incorrect

Q 4/5

Q : Which equation is used to define resistance?

A Energy = $(current)^2 \times$ resistance × time

B potential difference = current × resistance

C power = $(current)^2 \times$ resistance

D resistivity = resistance × area + length

1 2 3 4 5

Correct

Unattempted

Incorrect

Q 5/5

Q :
Electrical power is expressed as

A $V\frac{\Delta Q}{\Delta t}$

B $\frac{t}{W}$

C $\frac{V}{t}$

D $\frac{\Delta Q}{V\Delta t}$

Explanation

$$P = VI = V\frac{\Delta Q}{\Delta t}$$

QUIZZES

Practice Test No. 23

5 Questions

5 min

Topics

E.M.F and terminal potential difference, Maximum power output

Start Quiz

04 : 59

USAMA SOHAIL

Q 1/5 5 min Hint

Q : Maximum Power delivered by battery is:

A $P_{max} = \frac{E^2}{4r}$

B $P_{max} = 4rE^2$

C $P_{max} = VIt$

D unlimited

1 2 3 4 5

04 : 57

Q 2/5 5 min Hint

Q : Which device is used to determine internal resistance of a cell:

A potentiometer

B wheat stone bridge

C voltmeter

D ammeter

1 2 3 4 5

Q 3/5 5 min Hint

Q : The terminal potential difference V of a cell is

A E-Ir

B E+Ir

C EI-r

D EI+r

04 : 54

USAMA SOHAIL

Q 4/5 | 5 min | Hint

Q : The emf is always present when ________ current is drawn from the battery

A only maximum

B only minimum

C only zero

D zero or no

1 2 3 4 5

Q : The energy supplied to unit charge by the cell is given by

A $E = \frac{\Delta W}{\Delta Q}$

B $E = \frac{\Delta Q}{\Delta W}$

C $E = \Delta Q \times \Delta W$

D none of these

Correct

Unattempted

Incorrect

Q 1/5

Q : Maximum Power delivered by battery is:

A $P_{max} = \frac{E^2}{4r}$

B $P_{max} = 4rE^2$

C $P_{max} = VIt$

D unlimited

Explanation

Formula.

Correct

Unattempted

Incorrect

Q 2/5

Q : Which device is used to determine internal resistance of a cell:

A potentiometer

B wheat stone bridge

C voltmeter

D ammeter

Practice Test No. 23

Correct

Unattempted

Incorrect

Q 3/5

Q : The terminal potential difference V of a cell is

A E-Ir

B E+Ir

C EI-r

D EI+r

1 2 3 4 5

Correct

Unattempted

Incorrect

Q 4/5

Q : The emf is always present when _______ current is drawn from the battery

A only maximum

B only minimum

C only zero

D zero or no

Explanation

Basic concept of emf.

Correct

Unattempted

Incorrect

Q 5/5

Q : The energy supplied to unit charge by the cell is given by

A $E = \frac{\Delta W}{\Delta Q}$

B $E = \frac{\Delta Q}{\Delta W}$

C $E = \Delta Q \times \Delta W$

D none of these

QUIZZES

Practice Test No. 24

5 Questions

5 min

Topics

Kirchoff's Rules, kirchoff's first rule , kirchoff's second rule

Start Quiz

04 : 59

USAMA SOHAIL

Q 1/5 5 min Hint

Q :

According to Kirchhoff's 2^{nd} rule, if a source of emf is traversed from negative to positive then the potential change is

A positive

B negative

C zero

D none of these

1 2 3 4 5

04 : 57

USAMA SOHAIL

Q 2/5 5 min Hint

Q : dd

A maximum current flows through the galvanometer

B minimum current flows through the galvanometer

C potential difference across galvanometer is maximum

D potential difference across galvanometer is zero.

Q 3/5 5 min Hint

Q : rf

A 2 resistances

B 3 resistances

C 4 resistances

D c

04 : 55

USAMA SOHAIL

Q 4/5 5 min Hint

Q : ggg

A Wheat stone bridge

B galvanometer

C potentiometer

D voltmeter

1 2 3 4 5

04 : 53

Q 5/5 5 min Hint

Q : Kirchhoff's voltage rule is a way of stating conservation of:

A energy

B momentum

C charge

D angular momentum

1 2 3 4 5

Practice Test No. 24

Correct

Unattempted

Incorrect

Q 1/5

Q :

According to Kirchhoff's 2^{nd} rule, if a source of emf is traversed from negative to positive then the potential change is

A positive

B negative

C zero

D none of these

Explanation

Rule.

1 2 3 4 5

Practice Test No. 24

Correct

Unattempted

Incorrect

Q 2/5

Q : dd

A maximum current flows through the galvanometer

B minimum current flows through the galvanometer

C potential difference across galvanometer is maximum

D potential difference across galvanometer is zero.

Correct

Unattempted

Incorrect

Q 3/5

Q : rf

A 2 resistances

B 3 resistances

C 4 resistances

D c

Correct

Unattempted

Incorrect

Q 4/5

Q : ggg

A Wheat stone bridge

B galvanometer

C potentiometer

D voltmeter

Correct

Unattempted

Incorrect

Q 5/5

Q : Kirchhoff's voltage rule is a way of stating conservation of:

A energy

B momentum

C charge

D angular momentum

QUIZZES

Practice Test No. 25

5 Questions

5 min

Topics

Wheatstone bridge

Start Quiz

04 : 59

USAMA SOHAIL

Q 1/5 5 min Hint

Q : A balanced wheatstone bridge is used to measure the:

A the current

B pot difference

C an unknown resistance

D none of above

1 2 3 4 5

04 : 58

USAMA SOHAIL

Q 2/5 | 5 min | Hint

Q : The condition for the wheatstone bridge to be balanced is given by:

A $\frac{R_1}{R_2} = \frac{R_3}{R_4}$

B $\frac{R_2}{R_1} = \frac{R_3}{R_4}$

C $\frac{R_1}{R_2} = \frac{R_4}{R_3}$

D none of above

1 2 3 4 5

Q : Which one of the following instrument can measure the unknown resistance with sufficient accuracy:

A potentiometer

B slide wire bridge

C galvanometer

D all of above

04 : 55

USAMA SOHAIL

Q 4/5 5 min Hint

Q : Wheatstone bridge cannot measure

A current

B resistance galvanometer

C emf

D all of these

1 2 3 4 5

04 : 54

USAMA SOHAIL

Q 5/5 5 min Hint

Q : current flowing through galvanometer will be zero if

A $I_1 = I_2$

B $I_1 - I_2 = 0$

C both A and B

D none of these

1 2 3 4 5

QUIZZES

Practice Test 27

5 Questions

5 min

Topics

Force on a current carrying conductor in a uniform magnetic field

Start Quiz

04 : 46

USAMA SOHAIL

Q 1/5 5 min Hint

Q : If fingers of right hand show the direction of magnetic field and palm shows the direction of force then thumb points for

A torque

B voltage

C current

D induced emf

04 : 43

USAMA SOHAIL

Q 2/5 | 5 min | Hint

Q : The name of the scientist who noted that a compass needle was deflected when placed near the current carrying conductor:

A Henry

B Faraday

C Coloumb

D Oersted

1 2 3 4 5

Q 3/5 5 min Hint

Q : When some compass needles are placed on a cardboard along a circle with the center at the wire, they will:

A Set themselves tangential to the circle

B Points in the direction of N-S

C Points in the direction of E-W

D None of these

04 : 36

USAMA SOHAIL

Q 4/5 5 min Hint

Q : Representation of a current flowing towards a reader is denoted by

A dot

B dash

C cross

D tick

1 2 3 4 5

04 : 32

USAMA SOHAIL

Q 5/5 — 5 min — Hint

Q : A current carrying conductor experiences maximum magnetic force in a uniform magnetic field when it is placed

A. perpendicular to field

B. parallel to field

C. at an angle of 60° to the field

D. at an angle of 180° to the field

Correct
Unattempted
Incorrect
Q 1/5

Q : If fingers of right hand show the direction of magnetic field and palm shows the direction of force then thumb points for

A torque

B voltage

C current

D induced emf

Explanation

Using R.H.R thumb points for direction of current.

Correct
Unattempted
Incorrect
Q 2/5

Q : The name of the scientist who noted that a compass needle was deflected when placed near the current carrying conductor:

A Henry

B Faraday

C Coloumb

D Oersted

Explanation

Information.

Correct

Unattempted

Incorrect

Q 3/5

Q : When some compass needles are placed on a cardboard along a circle with the center at the wire, they will:

A Set themselves tangential to the circle

B Points in the direction of N-S

C Points in the direction of E-W

D None of these

Explanation

Function of compass needles.

Correct

Unattempted

Incorrect

Q 4/5

Q : Representation of a current flowing towards a reader is denoted by

A dot

B dash

C cross

D tick

Practice Test 27

Correct

Unattempted

Incorrect

Q 5/5

Q : A current carrying conductor experiences maximum magnetic force in a uniform magnetic field when it is placed

A perpendicular to field

B parallel to field

C at an angle of 60° to the field

D at an angle of 180° to the field

QUIZZES

Practice Test 28

5 Questions

5 min

Topics

Magnetic flux and flux density

Start Quiz

04 : 57

USAMA SOHAIL

Q 1/5 5 min Hint

Q : Unit of magnetic flux is:

A weber

B gauss

C tesla

D ampere/m^2

1 2 3 4 5

04 : 54

USAMA SOHAIL

Q 2/5 5 min Hint

Q : The dimensions of magnetic flux are:

A $M^1L^{-2}T^1A^1$

B $MLT^{-2}A^{-1}$

C $ML^2 T^2 A^1$

D $ML^2T^{-2}A^{-1}$

04 : 50

USAMA SOHAIL

Q 3/5 5 min Hint

Q : When the angle between the vector area and the magnetic field is 0° then magnetic flux is:

A Half

B Minimum

C Maximum

D Double

1 2 3 4 5

Q : The magnetic flux will be maximum when the angle between $\vec{B}$ and $\vec{A}$ is

A 270^0

B 60^0

C 90^0

D 0^0

04 : 44

USAMA SOHAIL

Q 5/5 5 min Hint

Q : One weber is equal to

A NA^{-1}

B $Nm^{-1}A$

C NmA^{-1}

D $Nm^{-1}A^{-1}$

1 2 3 4 5

Correct

Unattempted

Incorrect

Q 1/5

Q : Unit of magnetic flux is:

A weber

B gauss

C tesla

D ampere/m^2

Explanation

$\phi = \vec{B}.\vec{A} \Rightarrow weber = Tela.(metre)^2$

Correct

Unattempted

Incorrect

Q 2/5

Q : The dimensions of magnetic flux are:

A $M^1L^{-2}T^1A^1$

B $MLT^{-2}A^{-1}$

C $ML^2T^2A^1$

D $ML^2T^{-2}A^{-1}$

Explanation

$$\phi = BA = \frac{F}{IL}.A \Rightarrow kgm^2s^{-2}A^{-1} \Rightarrow [ML^2T^{-2}A^{-1}]$$

Correct

Unattempted

Incorrect

Q 3/5

Q : When the angle between the vector area and the magnetic field is 0° then magnetic flux is:

A Half

B Minimum

C Maximum

D Double

Explanation

$\phi = BA\cos 0^{o} = (BA)_{max}$

Correct

Unattempted

Incorrect

Q 4/5

Q : The magnetic flux will be maximum when the angle between $\vec{B}$ and $\vec{A}$ is

A 270^0

B 60^0

C 90^0

D 0^0

Practice Test 28

Correct

Unattempted

Incorrect

Q 5/5

Q : One weber is equal to

A NA^{-1}

B $Nm^{-1}A$

C NmA^{-1}

D $Nm^{-1}A^{-1}$

Explanation

$\phi = \vec{B}.\vec{A}$

$Weber = (NA^{-1}m^{-1})(m^2) = NmA^{-1}$

1 2 3 4 5

QUIZZES

Practice Test 29

5 Questions

5 min

Topics

Ampere's Law and determination of Flux density'B', Ampere's Law and field due to a current carrying solenoid

Start Quiz

04 : 57

USAMA SOHAIL

Q 1/5 5 min Hint

Q : Amperian path is:

A Circular path

B Closed path

C Rectangular path

D Any of above

1 2 3 4 5

04 : 55

USAMA SOHAIL

Q 2/5 5 min Hint

Q : μ_o is called:

A Permeability of free space

B Proportional constant

C Permitivity of free space

D None of these

1 2 3 4 5

Q 3/5 5 min Hint

Q : The magnetic field inside the solenoid can be increased by:

A Increasing number of truns

B Decreasing current

C Increasing current

D Both (a) and (c)

04 : 47

USAMA SOHAIL

Q 4/5 | 5 min | Hint

Q : The strength of magnetic field produced inside the solenoid when it has n terns per unit length and current I is

A $B = \mu_\circ N^2 I^2$

B $B = \mu_\circ NI$

C $B = \mu_\circ nI$

D $B = \mu_\circ \frac{N}{I}$

04 : 44

USAMA SOHAIL

Q 5/5 5 min Hint

Q : The magnetic field inside a long solenoid, when current “I” passed through it will be:

A weak

B strong

C zero

D first strong then weak

1 2 3 4 5

Correct

Unattempted

Incorrect

Q 1/5

Q : Amperian path is:

A Circular path

B Closed path

C Rectangular path

D Any of above

Explanation

It is closed imaginary path.

Correct

Unattempted

Incorrect

Q 2/5

Q : μ_o is called:

A Permeability of free space

B Proportional constant

C Permitivity of free space

D None of these

Explanation

$B = \frac{\mu_o I}{2\pi r}$ where $\mu_o = 4\pi \times 10^{-7} web.A^{-1}m^{-1}$

Correct

Unattempted

Incorrect

Q 3/5

Q : The magnetic field inside the solenoid can be increased by:

A Increasing number of truns

B Decreasing current

C Increasing current

D Both (a) and (c)

Explanation

$B = \mu_o \frac{N}{L} I \Rightarrow B \propto I, \ B \propto N$

Correct

Unattempted

Incorrect

Q 4/5

Q : The strength of magnetic field produced inside the solenoid when it has n terns per unit length and current I is

A $B = \mu_\circ N^2 I^2$

B $B = \mu_\circ NI$

C $B = \mu_\circ nI$

D $B = \mu_\circ \frac{N}{I}$

Explanation

Formula: $B = \mu_o nI$

Correct

Unattempted

Incorrect

Q 5/5

Q : The magnetic field inside a long solenoid, when current "I" passed through it will be:

A weak

B strong

C zero

D first strong then weak

Explanation

Parallel and equally spaced.

QUIZZES

Practice Test 30

5 Questions

5 min

Topics

Force on a moving charge in a magnetic field

Start Quiz

04 : 58

USAMA SOHAIL

Q 1/5 5 min Hint

Q : The magnetic force experienced by a charge particle moving in a magnetic field will be maximum when it moves:

A parallel to magnetic field

B Anti-parallel to magnetic field

C Perpendicular to magnetic field

D None of these

04 : 57

USAMA SOHAIL

Q 2/5 5 min Hint

Q : Which one is suitable for circular trajectory of a charged particle

A Magnetic field

B Electric field

C Conservative field

D Gravitational field

1 2 3 4 5

04 : 55

USAMA SOHAIL

Q 3/5 5 min Hint

Q : The force $F = F_e + F_m$ in the equation is called

A deflecting force

B restoring force

C Lorentz force

D none of these

1 2 3 4 5

Q 4/5 5 min Hint

Q : The electric force can

A change the speed of particle

B cannot change the speed

C has not effect

D all of these

Q : An electron of mass 'm' and charge 'e' is moving in a circle of radius 'r' with speed 'v' in a uniform magnetic field of strength B. then

A $r \propto m$

B $r \propto B$

C $r \propto \frac{1}{v}$

D $r \propto \frac{1}{m}$

Correct

Unattempted

Incorrect

Q 1/5

Q : The magnetic force experienced by a charge particle moving in a magnetic field will be maximum when it moves:

A parallel to magnetic field

B Anti-parallel to magnetic field

C Perpendicular to magnetic field

D None of these

Explanation

$F = qvB\sin 90^o = qvB$

Correct
Unattempted
Incorrect
Q 2/5

Q : Which one is suitable for circular trajectory of a charged particle

A Magnetic field

B Electric field

C Conservative field

D Gravitational field

Correct

Unattempted

Incorrect

Q 3/5

Q : The force $F = F_e + F_m$ in the equation is called

A deflecting force

B restoring force

C Lorentz force

D none of these

Correct

Unattempted

Incorrect

Q 4/5

Q : The electric force can

A change the speed of particle

B cannot change the speed

C has not effect

D all of these

Correct

Unattempted

Incorrect

Q 5/5

Q : An electron of mass ‘m’ and charge ‘e’ is moving in a circle of radius ‘r’ with speed ‘v’ in a uniform magnetic field of strength B. then

A $r \propto m$

B $r \propto B$

C $r \propto \frac{1}{v}$

D $r \propto \frac{1}{m}$

QUIZZES

Practice Test 31

5 Questions

5 min

Topics

Motion of charged particle in electric and magnetic field

Start Quiz

04 : 58

USAMA SOHAIL

Q 1/5 5 min Hint

Q : When a charged particle is projected perpendicularly in a magnetic field, its trajectory is

A hyper bola

B para boa

C helix

D circular

04 : 57

USAMA SOHAIL

Q 2/5 5 min Hint

Q : The electric force can

A change speed of particle

B deflect the particle

C Both A and B

D has not effect

1 2 3 4 5

04 : 55

USAMA SOHAIL

Q 3/5 5 min Hint

Q : Lorentz force is given by

A $q(\vec{E} - \vec{v} \times \vec{B})$

B $q(\vec{E} + \vec{v} \times \vec{B})$

C $q(\vec{E} \times (\vec{v} + \vec{B}))$

D $q(\vec{v} + \vec{v} + \vec{B})$

04 : 53

USAMA SOHAIL

Q 4/5 5 min Hint

Q : The sum of electric and magnetic force is called:

A Maxwell force

B Lorentz force

C Newton's force

D centripetal force

1 2 3 4 5

04 : 51

USAMA SOHAIL

Q 5/5 5 min Hint

Q : The Lorentz force on a charged particle moving in electric field E and magnetic field B is given by :

A $F = F_E + F_B$

B $F = F_E - F_B$

C $F = \frac{F_B}{F_E}$

D $F = F_E \times F_B$

Correct

Unattempted

Incorrect

Q 1/5

Q : When a charged particle is projected perpendicularly in a magnetic field, its trajectory is

A hyper bola

B para boa

C helix

D circular

Correct

Unattempted

Incorrect

Q 2/5

Q : The electric force can

A change speed of particle

B deflect the particle

C Both A and B

D has not effect

Explanation

Electric force is accelerating force.

Correct
Unattempted
Incorrect
Q 2/5

Q : The electric force can

A change speed of particle

B deflect the particle

C Both A and B

D has not effect

Explanation

Electric force is accelerating force.

USAMA SOHAIL

Correct

Unattempted

Incorrect

Q 3/5

Q : Lorentz force is given by

A $q(\vec{E} - \vec{v} \times \vec{B})$

B $q(\vec{E} + \vec{v} \times \vec{B})$

C $q(\vec{E} \times (\vec{v} + \vec{B}))$

D $q(\vec{v} + \vec{v} + \vec{B})$

Explanation

Lorentz equation.

Correct

Unattempted

Incorrect

Q 4/5

Q : The sum of electric and magnetic force is called:

A Maxwell force

B Lorentz force

C Newton's force

D centripetal force

Explanation

Lorentz equation.

$\vec{F} = \vec{F}_e + \vec{F}_m$

Correct

Unattempted

Incorrect

Q 5/5

Q : The Lorentz force on a charged particle moving in electric field E and magnetic field B is given by :

A $F = F_E + F_B$

B $F = F_E - F_B$

C $F = \frac{F_B}{F_E}$

D $F = F_E \times F_B$

Explanation

Lorentz equation.

QUIZZES

Practice Test 32

5 Questions

5 min

Topics

Determination of e/m of an electron

Start Quiz

04 : 55

USAMA SOHAIL

Q 1/5 5 min Hint

Q : The e/m of a neutron is:

A less than electron

B greater than electron

C zero

D the same as electron

1 2 3 4 5

04 : 53

USAMA SOHAIL

Q 2/5 | 5 min | Hint

Q : Work done by magnetic force

A zero

B Fd

C maximum

D $Fd\sin\theta$

1 2 3 4 5

04 : 51

USAMA SOHAIL

Q 3/5 5 min Hint

Q : The relation for e/m of an electron is

A $\frac{2V^2}{Br}$

B $\frac{2V}{B^2 r}$

C $\frac{2V}{Br^2}$

D $\frac{2V}{B^2 r^2}$

1 2 3 4 5

04 : 49

USAMA SOHAIL

Q 4/5 5 min Hint

Q : The e/m of a neutron is:

A less than electron

B greater than electron

C zero

D the same as electron

1 2 3 4 5

04 : 47

USAMA SOHAIL

Q 5/5 5 min Hint

Q : The value of e/m is smallest for:

A proton

B electron

C β-particle

D none

1 2 3 4 5

Practice Test 32

USAMA SOHAIL

Correct

Unattempted

Incorrect

Q 1/5

Q : The e/m of a neutron is:

A less than electron

B greater than electron

C zero

D the same as electron

Explanation

$\frac{e}{m} = \frac{0}{m} = 0$ [For neutron charge is zero]

1 2 3 4 5

Correct

Unattempted

Incorrect

Q 2/5

Q : Work done by magnetic force

A zero

B Fd

C maximum

D $Fd\sin\theta$

Explanation

$W = Fd\cos 90^o = 0$

Practice Test 32

USAMA SOHAIL

Correct

Unattempted

Incorrect

Q 3/5

Q : The relation for e/m of an electron is

A $\frac{2V^2}{Br}$

B $\frac{2V}{B^2r}$

C $\frac{2V}{Br^2}$

D $\frac{2V}{B^2r^2}$

Explanation

$$\frac{e}{m}=\frac{2v}{B^2r^2}$$

Correct
Unattempted
Incorrect
Q 4/5

Q : The e/m of a neutron is:

A less than electron

B greater than electron

C zero

D the same as electron

Correct

Unattempted

Incorrect

Q 5/5

Q : The value of e/m is smallest for:

A proton

B electron

C β-particle

D none

Explanation

$$\left(\frac{e}{m}\right) \propto \frac{1}{m}$$

$$m_p > m_e$$

$$\left(\frac{e}{m}\right) < \left(\frac{e}{\right.}\right.$$

Correct

Unattempted

Incorrect

Q 5/5

Q : The value of e/m is smallest for:

A proton

B electron

C β-particle

D none

Explanation

$$\left(\frac{e}{m}\right) \propto \frac{1}{m}$$

$$m_p > m_e$$

$$\left(\frac{e}{m}\right)_p < \left(\frac{e}{m}\right)_e$$

QUIZZES

Practice Test 33

5 Questions

5 min

Topics

Cathode Ray Oscilloscope

Start Quiz

Q 1/5 5 min Hint

Q : In CRO the waveform created by sweep or time base generator is

A cosine wave

B sinusoidal wave

C saw tooth wave

D none of these

04 : 57

USAMA SOHAIL

Q 2/5 5 min Hint

Q : The anode in the CRO is

A controls number of waves

B controls brightness of spot formed

C accelerates and focuses the beam

D at negative potential with respect to cathode

1 2 3 4 5

04 : 54

USAMA SOHAIL

Q 3/5 | 5 min | Hint

Q : The brightness of the spot on CRO screen is controlled by:

A anode

B cathode

C grid

D screen

1 2 3 4 5

04 : 52

USAMA SOHAIL

Q 4/5 | 5 min | Hint

Q : In CRO, the output wave form of time base generator is:

A circular

B square

C sinusoidal

D saw-tooth

1 2 3 4 5

04 : 49

USAMA SOHAIL

Q 5/5 5 min Hint

Q : Cathode ray oscilloscope works by deflecting a beam of:-

A protons

B positrons

C electrons

D neutrons

1 2 3 4 5

Correct
Unattempted
Incorrect
Q 1/5

Q : In CRO the waveform created by sweep or time base generator is

A cosine wave

B sinusoidal wave

C saw tooth wave

D none of these

Explanation

Saw tooth wave.

Correct
Unattempted
Incorrect
Q 2/5

Q : The anode in the CRO is

A controls number of waves

B controls brightness of spot formed

C accelerates and focuses the beam

D at negative potential with respect to cathode

Correct

Unattempted

Incorrect

Q 3/5

Q : The brightness of the spot on CRO screen is controlled by:

A anode

B cathode

C grid

D screen

Explanation

Brightness $\propto$ no of electron
no of electron controlled by grid.

Correct

Unattempted

Incorrect

Q 4/5

Q : In CRO, the output wave form of time base generator is:

A circular

B square

C sinusoidal

D saw-tooth

Correct
Unattempted
Incorrect
Q 5/5

Q : Cathode ray oscilloscope works by deflecting a beam of:-

A protons

B positrons

C electrons

D neutrons

QUIZZES

Practice Test 34

5 Questions

5 min

Topics

Torque on a current carrying coil

Start Quiz

04 : 59

USAMA SOHAIL

Q 1/5 5 min Hint

Q : The torque on current carrying coil is

A τ= NIAB cosα

B τ= BIL sinα

C τ= NIAB sinα

D τ= BIL cosα

1 2 3 4 5

04 : 57

USAMA SOHAIL

Q 2/5 5 min Hint

Q : The relation for maximum value of deflecting torque is given by

A $\tau = \frac{B}{NIA}$

B $\tau = NIAB$

C $\tau = BNA$

D $\tau = BNA \sin\theta$

04 : 56

USAMA SOHAIL

Q 3/5 5 min Hint

Q : The expression for torque acting on a current carrying coil placed in a uniform magnetic field is equal to

A τ = BIA cos α

B τ = BA cos α

C τ = BIA sin α

D τ = IB cos α

04 : 54

USAMA SOHAIL

Q 4/5 | 5 min | Hint

Q : Mathematically, torque on a current carrying loop whose plane makes an angle of α with $\vec{B}$ is given by

A. IL B cotα

B. IL B sinα

C. IL B tanα

D. ILB cosα

04 : 53

USAMA SOHAIL

Q 5/5 5 min Hint

Q : Torque is produced in a current carrying coil when it is placed in a

A magnetic field

B electric field

C gravitational field

D nuclear field

1 2 3 4 5

Correct

Unattempted

Incorrect

Q 1/5

Q : The torque on current carrying coil is

A τ= NIAB cosα

B τ= BIL sinα

C τ= NIAB sinα

D τ= BIL cosα

Practice Test 34

USAMA SOHAIL

Correct

Unattempted

Incorrect

Q 2/5

Q : The relation for maximum value of deflecting torque is given by

A $\tau = \frac{B}{NIA}$

B $\tau = NIAB$

C $\tau = BNA$

D $\tau = BNA \sin\theta$

Explanation

$\tau = NIBA\cos\theta^{o} = NIBA$

1 2 3 4 5

Correct

Unattempted

Incorrect

Q 3/5

Q : The expression for torque acting on a current carrying coil placed in a uniform magnetic field is equal to

A τ = BIA cos α

B τ = BA cos α

C τ = BIA sin α

D τ = IB cos α

Explanation

Formula.

Correct

Unattempted

Incorrect

Q 4/5

Q : Mathematically, torque on a current carrying loop whose plane makes an angle of α with $\vec{B}$ is given by

A IL B cotα

B IL B sinα

C IL B tanα

D ILB cosα

Correct

Unattempted

Incorrect

Q 5/5

Q : Torque is produced in a current carrying coil when it is placed in a

A magnetic field

B electric field

C gravitational field

D nuclear field

Explanation

Coil experience torque in magnetic field $(\tau = NIBA\cos\alpha)$

QUIZZES

Practice Test 35

5 Questions

5 min

Topics

Galvanometer

Start Quiz

04 : 58

USAMA SOHAIL

Q 1/5 5 min Hint

Q : In case of galvanometer, the magnitude of the deflecting torque is given as

A BIN cos α

B BIN cos α

C NIA cos α

D None of above

04 : 57

USAMA SOHAIL

Q 2/5 | 5 min | Hint

Q : The working of all D.C electric meters (ammeters, galvanometer and voltmeter) based upon

A magnetic force exerted on the moving charge

B chemical effect of current

C magnetic effect of current

D none of these

04 : 55

USAMA SOHAIL

3/5 | 5 min | Hint

Q : The sensitivity of a galvanometer can be increased by

A decreasing the area of the coil

B increasing the magnetic field

C decreasing the number of turns

D all of these

1 2 3 4 5

Q : The relation between current I and angle of deflection θ in a moving coil galvanometer is:

A $I \propto \theta$

B $I \propto \frac{1}{\theta}$

C $I \propto \sin\theta$

D $I \propto \cos\theta$

04 : 52

USAMA SOHAIL

5/5 5 min Hint

Q : The couple c for unit twist of the suspension wire can be decreased by

A increasing its length

B decreasing its length

C increasing its diameter

D its cannot be decreased

1 2 3 4 5

Correct

Unattempted

Incorrect

Q 1/5

Q : In case of galvanometer, the magnitude of the deflecting torque is given as

A BIN cos α

B BIN cos α

C NIA cos α

D None of above

Explanation

$\tau_a = NIBA\cos a$

Practice Test 35

Correct

Unattempted

Incorrect

Q 2/5

Q : The working of all D.C electric meters (ammeters, galvanometer and voltmeter) based upon

A magnetic force exerted on the moving charge

B chemical effect of current

C magnetic effect of current

D none of these

Correct
Unattempted
Incorrect
Q 3/5

Q : The sensitivity of a galvanometer can be increased by

A decreasing the area of the coil

B increasing the magnetic field

C decreasing the number of turns

D all of these

Explanation

$$Senstivity = \frac{\theta}{I} = \frac{NAB}{C} \uparrow Senstivity \propto B \uparrow$$

Practice Test 35

USAMA SOHAIL

Correct

Unattempted

Incorrect

Q 4/5

Q : The relation between current I and angle of deflection θ in a moving coil galvanometer is:

A $I \propto \theta$

B $I \propto \frac{1}{\theta}$

C $I \propto \sin\theta$

D $I \propto \cos\theta$

Explanation

$\uparrow I \propto \theta \uparrow$

Correct

Unattempted

Incorrect

Q 5/5

Q : The couple c for unit twist of the suspension wire can be decreased by

A increasing its length

B decreasing its length

C increasing its diameter

D its cannot be decreased

Explanation

$\downarrow C \propto \frac{1}{l \uparrow}$

QUIZZES

Practice Test 36

5 Questions

5 min

Topics

Conversion of Galvanometer, A.V.O Multimeter, Ammeter , Voltmeter , Ohmmeter

Start Quiz

04 : 58

USAMA SOHAIL

Q 1/5 | 5 min | Hint

Q : When a small resistance is connected parallel to the galvanometer, the resulting is

A voltmeter

B Wheatstone bridge

C ammeter

D potentiometer

1 2 3 4 5

04 : 56

USAMA SOHAIL

Q 2/5 | 5 min | Hint

Q : The shunt resistance is given by

A $R_s = \frac{I_g R_g}{I + I_g}$

B $R_s = \frac{I_g R_g}{I - I_g}$

C $R_s = \frac{I_g R_g}{I_g - I}$

D $R_s = \frac{I_g R_g}{I_g + I}$

04 : 55

USAMA SOHAIL

Q 3/5   5 min   Hint

Q : AVO-meter is used to measure the

A resistance

B current

C voltage

D all of these

1 2 3 4 5

04 : 53

USAMA SOHAIL

Q 4/5 | 5 min | Hint

Q : The low current required to produce 1mm deflection on a scale placed 1m away from mirror of galvanometer is called

A sensitivity of voltmeter

B sensitivity of ohm meter

C sensitivity of ammeter

D current sensitivity of galvanometer

Q : Useful device to measure resistance, current and voltage is an electronic instrument called:

A voltmeter

B ammeter

C ohmmeter

D digital multimeter

Practice Test 36

Correct

Unattempted

Incorrect

Q 1/5

Q : When a small resistance is connected parallel to the galvanometer, the resulting is

A voltmeter

B Wheatstone bridge

C ammeter

D potentiometer

Explanation

Conversion of galvanometer to Ammeter.

Correct

Unattempted

Incorrect

Q 2/5

Q : The shunt resistance is given by

A $R_s = \frac{I_g R_g}{I + I_g}$

B $R_s = \frac{I_g R_g}{I - I_g}$

C $R_s = \frac{I_g R_g}{I_g - I}$

D $R_s = \frac{I_g R_g}{I_g + I}$

Explanation

Formula.

Correct

Unattempted

Incorrect

Q 3/5

Q : AVO-meter is used to measure the

A resistance

B current

C voltage

D all of these

Explanation

A for Ammeter, v For voltmeter and 0 For ohm-meter

Correct

Unattempted

Incorrect

Q 4/5

Q : The low current required to produce 1mm deflection on a scale placed 1m away from mirror of galvanometer is called

A sensitivity of voltmeter

B sensitivity of ohm meter

C sensitivity of ammeter

D current sensitivity of galvanometer

Explanation

Senstivity $= \frac{\theta}{I}$

Correct

Unattempted

Incorrect

Q 5/5

Q : Useful device to measure resistance, current and voltage is an electronic instrument called:

A voltmeter

B ammeter

C ohmmeter

D digital multimeter

Explanation

Functions of DMM.

QUIZZES

Practice Test 37

5 Questions

5 min

Topics

Induced EMF and Induced Current

Start Quiz

04 : 57

USAMA SOHAIL

Q 1/5 5 min Hint

Q : The induced emf in a circuit depends upon:

A maximum magnetic flux

B change in magnetic flux

C initial magnetic flux

D rate of change of magnetic flux

04 : 54

USAMA SOHAIL

Q 2/5 5 min Hint

Q : A coil of constant area is placed in a constant magnetic field, an induced current produced in the coil when:

A the coil is rotated

B the coil is stationary

C both A and B

D none of these

04 : 53

USAMA SOHAIL

Q 3/5 | 5 min | Hint

Q : Which of the following is scalar:

A Flux density

B emf

C magnetic flux

D both B and C

1 2 3 4 5

04 : 51

USAMA SOHAIL

Q 4/5 5 min Hint

Q : A magnetic compass will be deflected if it is kept near a:

A charge at rest

B charge in motion

C positive charge at rest

D none of them

1 2 3 4 5

04 : 50

USAMA SOHAIL

Q 5/5 5 min Hint

Q : The common doorbell required a voltage of about

A 9 Volts

B 8 volts

C 7 Volts

D 6 Volts

1 2 3 4 5

Correct

Unattempted

Incorrect

Q 1/5

Q : The induced emf in a circuit depends upon:

A maximum magnetic flux

B change in magnetic flux

C initial magnetic flux

D rate of change of magnetic flux

Explanation

$$\varepsilon = N\frac{\triangle\phi}{\triangle t} \Rightarrow \varepsilon \propto \frac{\triangle\phi}{\triangle t}$$

Correct

Unattempted

Incorrect

Q 2/5

Q : A coil of constant area is placed in a constant magnetic field, an induced current produced in the coil when:

A the coil is rotated

B the coil is stationary

C both A and B

D none of these

Correct
Unattempted
Incorrect
Q 3/5

Q : Which of the following is scalar:

A Flux density

B emf

C magnetic flux

D both B and C

Practice Test 37

Correct

Unattempted

Incorrect

Q 4/5

Q : A magnetic compass will be deflected if it is kept near a:

A charge at rest

B charge in motion

C positive charge at rest

D none of them

Correct
Unattempted
Incorrect
Q 5/5

Q : The common doorbell required a voltage of about

A 9 Volts

B 8 volts

C 7 Volts

D 6 Volts

Explanation

Information.

QUIZZES

Practice Test 38

5 Questions

5 min

Topics

Motional EMF

Start Quiz

04 : 59

USAMA SOHAIL

Q 1/5 5 min Hint

Q : When a conductor moves across a magnetic field, an emf is set up. This emf is called

A variable emf

B constant emf

C induced emf

D back emf

04 : 57

USAMA SOHAIL

Q 2/5 5 min Hint

Q :
The emf produced by the motion of a coil across the magnetic field is called:

A motional emf

B emf

C induced emf

D none of the above

Q : A straight line conductor of length 0.4 m is moved with speed of 7m/s perpendicular to the magnetic field 0.9 Wb/m^2. The induced emf across the conductor is:

A 1.26 volt

B 25.2 volt

C 2.52 volt

D 5.04 volt

04 : 54

USAMA SOHAIL

Q 4/5 | 5 min | Hint

Q : A flat circular coil of 120 turns, each of area $0.070m^2$, is placed with its axis parallel to a uniform magnetic field. The flux density of the field is changed steadily from 80 mT to 20 mT over a period of 4.0s. What is the emf induced in the coil curing this time?

A 0

B 130 mV

C 170 mV

D 500 mV

04 : 52

USAMA SOHAIL

Q 5/5 | 5 min | Hint

Q : The law of electromagnetic induction is related to:

A Lenz

B Faraday

C Coulomb

D Ampere

1 2 3 4 5

Correct

Unattempted

Incorrect

Q 1/5

Q : When a conductor moves across a magnetic field, an emf is set up. This emf is called

A variable emf

B constant emf

C induced emf

D back emf

Correct

Unattempted

Incorrect

Q 2/5

Q :
The emf produced by the motion of a coil across the magnetic field is called:

A motional emf

B emf

C induced emf

D none of the above

Explanation

Definition.

Correct

Unattempted

Incorrect

Q 3/5

Q : A straight line conductor of length 0.4 m is moved with speed of 7m/s perpendicular to the magnetic field 0.9 Wb/m^2. The induced emf across the conductor is:

A 1.26 volt

B 25.2 volt

C 2.52 volt

D 5.04 volt

Explanation

$\varepsilon = vBL\ \sin\theta = (7)(0.9)(0.4)\ \sin 90^o$

Correct

Unattempted

Incorrect

Q 4/5

Q : A flat circular coil of 120 turns, each of area $0.070 m^2$, is placed with its axis parallel to a uniform magnetic field. The flux density of the field is changed steadily from 80 mT to 20 mT over a period of 4.0s. What is the emf induced in the coil curing this time?

A 0

B 130 mV

C 170 mV

D 500 mV

Correct
Unattempted
Incorrect
Q 5/5

Q : The law of electromagnetic induction is related to:

A Lenz

B Faraday

C Coulomb

D Ampere

QUIZZES

Practice Test 39

5 Questions

5 min

Topics

Faraday's Law and induced EMF

Start Quiz

04 : 59

USAMA SOHAIL

Q 1/5 5 min Hint

Q : emf is induced due to change in

A charge

B current

C magnetic flux

D electric field

1 2 3 4 5

04 : 57

USAMA SOHAIL

Q 2/5 5 min Hint

Q : The rate of change of magnetic flux is directly proportional to the induced emf is called:

A Lenz law

B Faraday's

C Oersted law

D None of them

1 2 3 4 5

Q : Farady's law was deduced in:

A 1830

B 1841

C 1831

D 1931

04 : 54

USAMA SOHAIL

Q 4/5 5 min Hint

Q : The emf induced in the secondary coil is directly proportional to:

A rate of change of magnetic flux

B rate of change of electric flux

C change of magnetic flux

D all of above

04 : 53

USAMA SOHAIL

Q 5/5   5 min   Hint

Q : The negative sign in the equation $\varepsilon = M\frac{\Delta I}{\Delta t}$ shows that the induced emf in such a direction that it:

A Favours the current in the primary coil

B opposes the current in the primary coil

C opposes the change of current in the primary coil

D none of these

1 2 3 4 5

Correct

Unattempted

Incorrect

Q 1/5

Q : emf is induced due to change in

A charge

B current

C magnetic flux

D electric field

Correct

Unattempted

Incorrect

Q 2/5

Q : The rate of change of magnetic flux is directly proportional to the induced emf is called:

A Lenz law

B Faraday's

C Oersted law

D None of them

Explanation

$$\varepsilon = N\frac{\Delta\phi}{\Delta t} \Rightarrow \varepsilon \propto \frac{\Delta\phi}{\Delta t}$$

Practice Test 39

Correct

Unattempted

Incorrect

Q 3/5

Q : Farady's law was deduced in:

A 1830

B 1841

C 1831

D 1931

Explanation

Information.

Practice Test 39

Correct

Unattempted

Incorrect

Q 4/5

Q : The emf induced in the secondary coil is directly proportional to:

A rate of change of magnetic flux

B rate of change of electric flux

C change of magnetic flux

D all of above

Correct

Unattempted

Incorrect

Q 5/5

Q : The negative sign in the equation $\varepsilon = M\frac{\Delta I}{\Delta t}$ shows that the induced emf in such a direction that it:

A Favours the current in the primary coil

B opposes the current in the primary coil

C opposes the change of current in the primary coil

D none of these

QUIZZES

Practice Test 40

5 Questions

5 min

Topics

Lenz's Law

Start Quiz

04 : 59

USAMA SOHAIL

Q 1/5 5 min Hint

Q :

The direction of induced current is always so as to opposite the change which causes the current is

A Faraday's law

B Lenz's law

C Ohm's law

D Kirchoff's 1^{st} rule

04 : 57

USAMA SOHAIL

Q 2/5 | 5 min | Hint

Q : Lenz's law presented in:

A 1834

B 1934

C 1826

D 1836

1 2 3 4 5

04 : 56

USAMA SOHAIL

Q 3/5 5 min Hint

Q : Lenz's law provides a relation between:

A current and magnetic field

B force on a current carrying conductor and magnetic field

C induced emf and the rate of change of magnetic flux

D none of these

1 2 3 4 5

04 : 55

USAMA SOHAIL

Q 4/5 5 min Hint

Q : Lenz's law does not violated the principle of:

A conservation of mass

B conservation of energy

C conservation of charge

D conservation of momentum

04 : 54

USAMA SOHAIL

Q 5/5 | 5 min | Hint

Q : The direction of the induced emf during electromagnetic induction is determined by:

A. Lenz's law

B. Faraday's law

C. Ampere's law

D. none of these

Correct

Unattempted

Incorrect

Q 1/5

Q :

The direction of induced current is always so as to opposite the change which causes the current is

A Faraday's law

B Lenz's law

C Ohm's law

D Kirchoff's 1^{st} rule

Explanation

Law statement.

Practice Test 40

Correct

Unattempted

Incorrect

Q 2/5

Q : Lenz's law presented in:

A 1834

B 1934

C 1826

D 1836

Explanation

Information.

Correct

Unattempted

Incorrect

Q 3/5

Q : Lenz's law provides a relation between:

A current and magnetic field

B force on a current carrying conductor and magnetic field

C induced emf and the rate of change of magnetic flux

D none of these

Correct

Unattempted

Incorrect

Q 4/5

Q : Lenz's law does not violated the principle of:

A conservation of mass

B conservation of energy

C conservation of charge

D conservation of momentum

Practice Test 40

USAMA SOHAIL

Correct

Unattempted

Incorrect

Q 5/5

Q : The direction of the induced emf during electromagnetic induction is determined by:

A Lenz's law

B Faraday's law

C Ampere's law

D none of these

Explanation

Induced current direction determine by Lenz's law.

QUIZZES

Practice Test 41

5 Questions

5 min

Topics

Mutual Induction

Start Quiz

04 : 58

USAMA SOHAIL

Q 1/5 | 5 min | Hint

Q : One henry is equal to

A $Vs^{-1}A$

B $N.mA^{-1}$

C $V^{-1}s.A$

D $V.s.A^{-1}$

1 2 3 4 5

Q : Mathematically the mutual inductance inductance may be defined as:

A $-\frac{\varepsilon_s}{\frac{\Delta I_p}{\Delta t}}$

B $\frac{\varepsilon_s}{\frac{\Delta I_p}{\Delta t}}$

C $\frac{\varepsilon_s}{\frac{\Delta v}{\Delta t}}$

D none of these

04 : 55

USAMA SOHAIL

Q 3/5 | 5 min | Hint

Q : The SI unit of mutual inductance is:

A Farad

B Coulomb

C Henry

D Ampere

1 2 3 4 5

04 : 53

USAMA SOHAIL

Q 4/5 5 min Hint

Q : One henry is equal to:

A 1 ohm × 1 sec

B 1 ohm × 1 hertz

C 1 ohm × 1 metre

D all of above

Q : If one coil is wound on an iron core, the flux through it will:

A Remains constant

B Decrease

C Increase

D Becomes zero

Correct

Unattempted

Incorrect

Q 1/5

Q : One henry is equal to

A Vs^{-1} A

B $N.mA^{-1}$

C V^{-1} s.A

D $V.s.A^{-1}$

Explanation

$$\varepsilon = M\frac{\Delta I}{\Delta t} \Rightarrow M = \varepsilon / \left(\frac{\Delta I}{\Delta t}\right) \Rightarrow H = VSA^{-1}$$

USAMA SOHAIL

Correct

Unattempted

Incorrect

Q 2/5

Q : Mathematically the mutual inductance inductance may be defined as:

A $-\dfrac{\varepsilon_s}{\frac{\Delta I_p}{\Delta t}}$

B $\dfrac{\varepsilon_s}{\frac{\Delta I_p}{\Delta t}}$

C $\dfrac{\varepsilon_s}{\frac{\Delta v}{\Delta t}}$

D none of these

Explanation

$$\varepsilon_s = -M\frac{\Delta I_p}{\Delta t}$$

Correct
Unattempted
Incorrect
Q 3/5

Q : The SI unit of mutual inductance is:

A Farad

B Coulomb

C Henry

D Ampere

Explanation

$$M = \varepsilon / \left(\frac{\Delta I}{\Delta t}\right) \Rightarrow H = VSA^{-1}$$

Practice Test 41

USAMA SOHAIL

Correct

Unattempted

Incorrect

Q 4/5

Q : One henry is equal to:

A 1 ohm × 1 sec

B 1 ohm × 1 hertz

C 1 ohm × 1 metre

D all of above

Explanation

$\varepsilon = M\frac{\Delta I}{\Delta t} \Rightarrow IR = M\frac{\Delta I}{\Delta t} \Rightarrow M = r \times \Delta t \; 1H = 1\Omega \times 1\text{sec}$

Practice Test 41

USAMA SOHAIL

Correct

Unattempted

Incorrect

Q 5/5

Q : If one coil is wound on an iron core, the flux through it will:

A Remains constant

B Decrease

C Increase

D Becomes zero

Explanation

Because iron is magnetic material.

QUIZZES

Practice Test 42

5 Questions

5 min

Topics

Self Induction

Start Quiz

04 : 57

USAMA SOHAIL

Q 1/5 5 min Hint

Q : Self induction is expressed as:

A $\varepsilon_L = -\frac{\Delta I}{\Delta t}$

B $\varepsilon_L = -L\frac{\Delta I}{\Delta t}$

C $\varepsilon_L = \frac{\Delta \phi}{\Delta t}$

D $\varepsilon_L = -L\frac{\Delta t}{\Delta I}$

04 : 55

USAMA SOHAIL

Q 2/5 5 min Hint

Q : When the rate of change of current in a coil is unity then the induced emf is equal to:

A number of turns of the coil

B total flux linked with the coil

C coefficient of self inductance

D none of the above

1 2 3 4 5

Q : One Henry (H) equals

A $Vs\ A$

B $Vs\ A^2$

C $Vs\ A^{-1}$

D $Vs\ A^{-2}$

Q 4/5 5 min Hint

Q : Self inducting coils are called

A inductors

B conductors

C insulators

D semiconductors

04 : 51

USAMA SOHAIL

Q 5/5 5 min Hint

Q : Unit of inductance is

A Henry

B $Vs\ A^{-1}$

C Ωs

D all of these

1 2 3 4 5

Correct

Unattempted

Incorrect

Q 1/5

Q : Self induction is expressed as:

A $\varepsilon_L = -\frac{\Delta I}{\Delta t}$

B $\varepsilon_L = -L\frac{\Delta I}{\Delta t}$

C $\varepsilon_L = \frac{\Delta \phi}{\Delta t}$

D $\varepsilon_L = -L\frac{\Delta t}{\Delta I}$

Explanation

Formula.

Correct

Unattempted

Incorrect

Q 2/5

Q : When the rate of change of current in a coil is unity then the induced emf is equal to:

A number of turns of the coil

B total flux linked with the coil

C coefficient of self inductance

D none of the above

Explanation

$$\varepsilon = L\frac{\Delta I}{\Delta t} = L(1) = L$$

Correct

Unattempted

Incorrect

Q 3/5

Q : One Henry (H) equals

A $Vs\ A$

B $Vs\ A^2$

C $Vs\ A^{-1}$

D $Vs\ A^{-2}$

Explanation

$$L = \varepsilon / \left(\frac{\Delta I}{\Delta t}\right) \Rightarrow 1H = VSA^{-1}$$

Practice Test 42

Correct

Unattempted

Incorrect

Q 4/5

Q : Self inducting coils are called

A inductors

B conductors

C insulators

D semiconductors

Explanation

Definition.

Correct

Unattempted

Incorrect

Q 5/5

Q : Unit of inductance is

A Henry

B Vs A^{-1}

C Ωs

D all of these

QUIZZES

Practice Test 43

5 Questions

5 min

Topics

Energy stored in an inductor

Start Quiz

04 : 58

USAMA SOHAIL

Q 1/5 5 min Hint

Q : A coil of wire is also called:

A insulator

B semi-conductor

C inductor

D all of above

1 2 3 4 5

04 : 57

USAMA SOHAIL

Q 2/5 5 min Hint

Q : Energy stored per unit volume inside the solenoid is called:

A mass density

B energy density

C charge density

D volume density

1 2 3 4 5

Q : Magnetic potential energy stored in an inductor depends upon

A under root of the value of current

B cube root of the value of current

C cube of the value of current

D square of the value of current

04 : 54

USAMA SOHAIL

Q 4/5 5 min Hint

Q : An inductor may store energy in:

A its magnetic field

B its electric field

C its coil

D a neighboring circuit

04 : 53

USAMA SOHAIL

Q 5/5 5 min Hint

Q : $\frac{B^2}{2\mu_0}$ is the expression of:

A lenz's law

B magnetic energy

C magnetic energy density

D back emf

1 2 3 4 5

Practice Test 43

Correct

Unattempted

Incorrect

Q 1/5

Q : A coil of wire is also called:

A insulator

B semi-conductor

C inductor

D all of above

Correct
Unattempted
Incorrect
Q 2/5

Q : Energy stored per unit volume inside the solenoid is called:

A mass density

B energy density

C charge density

D volume density

Practice Test 43

Correct

Unattempted

Incorrect

Q 3/5

Q : Magnetic potential energy stored in an inductor depends upon

A under root of the value of current

B cube root of the value of current

C cube of the value of current

D square of the value of current

1 2 3 4 5

Correct

Unattempted

Incorrect

Q 4/5

Q : An inductor may store energy in:

A its magnetic field

B its electric field

C its coil

D a neighboring circuit

Correct
Unattempted
Incorrect
Q 5/5

Q : $\frac{B^2}{2\mu_0}$ is the expression of:

A lenz's law

B magnetic energy

C magnetic energy density

D back emf

Explanation

$Energy = \frac{E}{V} = \frac{B^2}{2\mu_o}$

Density

QUIZZES

Practice Test 44

5 Questions

5 min

Topics

Alternating Current Generator

Start Quiz

04 : 58

USAMA SOHAIL

Q 1/5 5 min Hint

Q : A.C generator is a device which converts:

A electrical energy into mechanical energy

B mechanical energy into electrical energy

C chemical energy into mechanical energy

D heat energy into electrical energy

Q : A device that converts mechanical energy into electrical energy is called:

A A.C generator

B Motor

C Converter

D Vibrator

Q : An alternating current is that which

A Flows intermediately

B Varies in magnitude

C Reverses its direction several times per second

D None of the above

04 : 54

USAMA SOHAIL

Q 4/5 | 5 min | Hint

Q : Commutator was invented in :

A 1834

B 1820

C 1840

D 1835

1 2 3 4 5

Q 5/5 5 min Hint

Q : Alternating current generator use :

A Split rings

B Slip rings

C Loop rings

D Coiled rings

Correct
Unattempted
Incorrect
Q 1/5

Q : A.C generator is a device which converts:

A electrical energy into mechanical energy

B mechanical energy into electrical energy

C chemical energy into mechanical energy

D heat energy into electrical energy

Explanation

Law of conservation of energy.

Correct

Unattempted

Incorrect

Q 2/5

Q : A device that converts mechanical energy into electrical energy is called:

A A.C generator

B Motor

C Converter

D Vibrator

Explanation

Definition.

Correct
Unattempted
Incorrect
Q 3/5

Q : An alternating current is that which

A Flows intermediately

B Varies in magnitude

C Reverses its direction several times per second

D None of the above

Explanation

Property of A.C generator.

Correct

Unattempted

Incorrect

Q 4/5

Q : Commutator was invented in :

A 1834

B 1820

C 1840

D 1835

Practice Test 44

Correct

Unattempted

Incorrect

Q 5/5

Q : Alternating current generator use :

A Split rings

B Slip rings

C Loop rings

D Coiled rings

Explanation

Construction of A.C generator.

QUIZZES

Practice Test 45

2 Questions

5 min

Topics

D.C Generator and back motor effect in Generators

Start Quiz

04 : 59

USAMA SOHAIL

Q 1/2 5 min Hint

Q : A device which converts electrical energy into mechanical energy is called

A transformer

B AC generator

C DC motor

D DC generator

1 2

04 : 57

USAMA SOHAIL

Q 2/2 5 min Hint

Q : In D.C generator output sine curve with the _________ half inverted.

A Lower

B Upper

C Both A and B

D None

1 2

Correct

Unattempted

Incorrect

Q 1/2

Q : A device which converts electrical energy into mechanical energy is called

A transformer

B AC generator

C DC motor

D DC generator

Explanation

Law of conservation of energy.

Correct

Unattempted

Incorrect

Q 2/2

Q : In D.C generator output sine curve with the ________ half inverted.

A Lower

B Upper

C Both A and B

D None

Explanation

Output sine wave.

QUIZZES

Practice Test 46

5 Questions

5 min

Topics

D.C Motor and back EMF effect in Motors

Start Quiz

04 : 59

USAMA SOHAIL

Q 1/5 5 min Hint

Q : If the motor is overloaded, then the magnitude of "Back emf".

A increases

B decreases

C constant

D becomes zero

1 2 3 4 5

04 : 57

USAMA SOHAIL

Q 2/5 | 5 min | Hint

Q : A D.C electric motor is based on the interaction of current and magnetic field and the principle employed is the same as in a:

A converter

B thermo couple

C D.C dynamo

D D.C galvanometer

04 : 56

USAMA SOHAIL

Q 3/5 5 min Hint

Q : The back emf in a motor is 120 V when motor is turning of 1680 rev/min. What is back emf. when motor turns 3360 rev/min?

A 240 V

B 240 J

C 240 C/J

D both A and C

1 2 3 4 5

04 : 55

USAMA SOHAIL

Q 4/5 | 5 min | Hint

Q : An electric generator is based on the principle of

A Faraday's law

B Lenz's law

C Ampere law

D Gauss's law

1 2 3 4 5

04 : 53

USAMA SOHAIL

Q 5/5 5 min Hint

Q : With the decrease in speed of motor, magnitude of back e.m.f:

A remains same

B increases

C decreases

D first increases then decreases

1 2 3 4 5

Correct

Unattempted

Incorrect

Q 1/5

Q : If the motor is overloaded, then the magnitude of "Back emf".

A increases

B decreases

C constant

D becomes zero

Explanation

In overloaded $\varepsilon \times Angular\ vebcity$

Correct
Unattempted
Incorrect
Q 2/5

Q : A D.C electric motor is based on the interaction of current and magnetic field and the principle employed is the same as in a:

A converter

B thermo couple

C D.C dynamo

D D.C galvanometer

Correct
Unattempted
Incorrect
Q 3/5

Q : The back emf in a motor is 120 V when motor is turning of 1680 rev/min. What is back emf. when motor turns 3360 rev/min?

A 240 V

B 240 J

C 240 C/J

D both A and C

Explanation

$\varepsilon \times \omega \Rightarrow if\ \omega = 2\omega\ then\ \varepsilon = 2\varepsilon$

Practice Test 46

Correct

Unattempted

Incorrect

Q 4/5

Q : An electric generator is based on the principle of

A Faraday's law

B Lenz's law

C Ampere law

D Gauss's law

1 2 3 4 5

Correct
Unattempted
Incorrect
Q 5/5

Q : With the decrease in speed of motor, magnitude of back e.m.f:

A remains same

B increases

C decreases

D first increases then decreases

Explanation

$\varepsilon \times \textit{Angular Speed}$

QUIZZES

Practice Test 47

5 Questions

5 min

Topics

Transformer

Start Quiz

04 : 59

USAMA SOHAIL

Q 1/5 | 5 min | Hint

Q : A transformer has:

A Two coil

B only one coil

C works on the principle of mutual induction

D none of these

04 : 58

USAMA SOHAIL

Q 2/5 5 min Hint

Q : The coils of a transformer are:

A magnetically linked

B electrically linked

C both A and B

D none of these

04 : 56

USAMA SOHAIL

Q 3/5 | 5 min | Hint

Q : When current I passes through a resistance R, the power loss due to heating effect is:

A. calculated by I^2R

B. zero

C. maximum

D. all of above

04 : 55

USAMA SOHAIL

Q 4/5 | 5 min | Hint

Q : Eddy currents are produced in a material when it is:

A heated

B placed in an electric field

C placed in a uniform magnetic field

D placed in time varying magnetic field

04 : 54

USAMA SOHAIL

Q 5/5 5 min Hint

Q : In transformer which of the following quantities has same value in primary and secondary

A rate of change of magnetic flux

B voltage

C current

D none of these

Correct

Unattempted

Incorrect

Q 1/5

Q : A transformer has:

A Two coil

B only one coil

C works on the principle of mutual induction

D none of these

Practice Test 47

Correct

Unattempted

Incorrect

Q 2/5

Q : The coils of a transformer are:

A magnetically linked

B electrically linked

C both A and B

D none of these

Explanation

Transformer of coils have no electrical connection, only magnetically link.

Correct

Unattempted

Incorrect

Q 3/5

Q : When current I passes through a resistance R, the power loss due to heating effect is:

A calculated by I^2R

B zero

C maximum

D all of above

Correct

Unattempted

Incorrect

Q 4/5

Q : Eddy currents are produced in a material when it is:

A heated

B placed in an electric field

C placed in a uniform magnetic field

D placed in time varying magnetic field

Correct

Unattempted

Incorrect

Q 5/5

Q : In transformer which of the following quantities has same value in primary and secondary

A rate of change of magnetic flux

B voltage

C current

D none of these

QUIZZES

Practice Test 48

5 Questions

5 min

Topics

Alternating current

Start Quiz

04 : 59

USAMA SOHAIL

Q 1/5 5 min Hint

Q : V_{rms} be the root mean square of value of emf then its peak value is given by

A $\frac{V_{rms}}{\sqrt{2}}$

B $\sqrt{2}\,V_{rms}$

C $\frac{2}{\sqrt{2}\,V_{rms}}$

D $\frac{V_{rms}}{2}$

04 : 57

USAMA SOHAIL

Q 2/5 5 min Hint

Q : If I_o is the peak value of current, then its root mean square value is given by

A $\sqrt{2}I_o$

B $2I_o$

C I_o

D $0.7\ I_o$

1 2 3 4 5

04 : 56

USAMA SOHAIL

Q 3/5 5 min Hint

Q : Using $\theta = \omega t$ and $\omega = \frac{2\pi}{T}$ the angle through which the coil of the A.C generator rotates when $t = \frac{T}{2}$ is

A π

B Zero

C $\frac{\pi}{2}$

D 2π

1 2 3 4 5

04 : 55

USAMA SOHAIL

Q 4/5 5 min Hint

Q : The most common source of an A.C. voltage is:

A motor

B cell

C generator

D thermocouple

1 2 3 4 5

04 : 54

USAMA SOHAIL

Q 5/5 5 min Hint

Q : During each cycle AC voltage reaches a peak value

A once

B twice

C thrice

D four times

1 2 3 4 5

Correct

Unattempted

Incorrect

Q 1/5

Q : V_{rms} be the root mean square of value of emf then its peak value is given by

A $\frac{V_{rms}}{\sqrt{2}}$

B $\sqrt{2}\, V_{rms}$

C $\frac{2}{\sqrt{2}\, V_{rms}}$

D $\frac{V_{rms}}{2}$

Explanation

$$V_{rms} = \frac{V_o}{\sqrt{2}}$$

Correct

Unattempted

Incorrect

Q 2/5

Q : If I_o is the peak value of current, then its root mean square value is given by

A $\sqrt{2} I_o$

B $2I_o$

C I_o

D $0.7\, I_o$

Explanation

$$I_{rms} = \frac{I_o}{\sqrt{2}} = 0.707\, I_o$$

USAMA SOHAIL

Correct

Unattempted

Incorrect

Q 3/5

Q : Using $\theta = \omega t$ and $\omega = \frac{2\pi}{T}$ the angle through which the coil of the A.C generator rotates when $t = \frac{T}{2}$ is

A π

B Zero

C $\frac{\pi}{2}$

D 2π

Explanation

$\theta = \omega t = 2\pi f t = \frac{2\pi}{T} \times \frac{T}{2} = \pi$

Correct
Unattempted
Incorrect
Q 4/5

Q : The most common source of an A.C. voltage is:

A motor

B cell

C generator

D thermocouple

Practice Test 48

USAMA SOHAIL

Correct

Unattempted

Incorrect

Q 5/5

Q : During each cycle AC voltage reaches a peak value

A once

B twice

C thrice

D four times

Explanation

Positive peak and negative peak.

QUIZZES

Practice Test 49

5 Questions

5 min

Topics

Phase of A.C

Start Quiz

04 : 59

USAMA SOHAIL

Q 1/5 5 min Hint

Q : The phase angle at +ve (positive) peak is

A $\frac{\pi}{2}$

B π

C $\frac{3\pi}{2}$

D 2π

1 2 3 4 5

04 : 57

USAMA SOHAIL

Q 2/5 5 min Hint

Q : Product of angular frequency and time period is:

A 2π

B $\frac{1}{2\pi}$

C 1

D π

04 : 56

USAMA SOHAIL

Q 3/5 5 min Hint

Q : When A.C voltage is applied to and inductor, the

A Voltage V leads current I by 90°

B Voltage V leads current I by 270°

C Voltage V leads current I by 0°

D None of these

04 : 55

USAMA SOHAIL

Q 4/5 5 min Hint

Q : Which of the following statement is correct for an A.C circuit

A The current depends upon the components connected in circuits

B The current lags the voltage by a phase angle of 90^{0}

C The current leads the voltage by a phase angle of 90^{0}

D The current and voltage are in same phase

04 : 53

USAMA SOHAIL

Q 5/5 5 min Hint

Q : The circuit in which current and voltage are in phase, the power factor is

A Double

B three times

C One

D Zero

Correct
Unattempted
Incorrect
Q 1/5

Q : The phase angle at +ve (positive) peak is

A $\frac{\pi}{2}$

B π

C $\frac{3\pi}{2}$

D 2π

Explanation

$$V = V_o \sin\left(\frac{\pi}{2}\right) = +V_o$$

Correct

Unattempted

Incorrect

Q 2/5

Q : Product of angular frequency and time period is:

A 2π

B $\frac{1}{2\pi}$

C 1

D π

Correct

Unattempted

Incorrect

Q 3/5

Q : When A.C voltage is applied to and inductor, the

A Voltage V leads current I by 90°

B Voltage V leads current I by 270°

C Voltage V leads current I by 0°

D None of these

Practice Test 49

Correct

Unattempted

Incorrect

Q 4/5

Q : Which of the following statement is correct for an A.C circuit

A The current depends upon the components connected in circuits

B The current lags the voltage by a phase angle of 90^0

C The current leads the voltage by a phase angle of 90^0

D The current and voltage are in same phase

Explanation

Depending upon circuit elements current can lead or lag.

Practice Test 49

USAMA SOHAIL

Correct

Unattempted

Incorrect

Q 5/5

Q : The circuit in which current and voltage are in phase, the power factor is

A Double

B three times

C One

D Zero

Explanation

$Pf = \cos(0^o) = 1$

1 2 3 4 5

QUIZZES

Practice Test 50

9 Questions

5 min

Topics

A.C circuit and A.C through a Resistor

Start Quiz

04 : 58

USAMA SOHAIL

Q 1/9 5 min Hint

Q : In pure resistive A.C. circuit, instantaneous value of voltage or current:

A current lags behind voltage

B current leads voltage by $\frac{\pi}{2}$

C both are in phase

D voltage leads current by $\frac{\pi}{2}$

04 : 57

USAMA SOHAIL

Q 2/9 5 min Hint

Q : The maximum current I_o passing through a resistance R connected with alternating voltage V_o is given by

A $I_o = R \times V_o$

B $I_o = \frac{V_o}{R}$

C $I_o = \frac{R}{V_o}$

D $I_o = V_o \times R$

04 : 56

USAMA SOHAIL

Q 3/9 5 min Hint

Q : The relation for the resistance according to Ohm's law is given by

A R=IV

B V/I =R

C I/V=R

D 1/IV =R

04 : 54

USAMA SOHAIL

Q 4/9 5 min Hint

Q : The power dissipated in a resistive circuit is

A $P=I^2R$

B $P=IV$

C $P=V^2/R$

D all of these

04 : 52

Q 5/9 5 min Hint

Q : The basic element in a D.C circuit which controls the current or voltage is called

A inductor

B resistor

C capacitor

D voltmeter

Q 6/9 5 min Hint

Q : The symbol used for inductor is

A R

B L

C C

D R-C

04 : 46

USAMA SOHAIL

Q 7/9

5 min

Hint

Q : At any time ‘t’ the potential difference across the terminals of the resistors is given by

A $V = V_o \sin\omega t$

B $V = V_o \sin\omega f$

C $V = V_o \cos\omega t$

D $V = V_o \cos\omega f$

3 4 5 6 7

04 : 44

USAMA SOHAIL

Q 8/9 5 min Hint

Q : The basic circuit element or elements in an A.C circuit is

A capacitor

B resistor

C inductor

D all of these

3 4 5 6 7

04 : 42

USAMA SOHAIL

Q 9/9 5 min Hint

Q : The power dissipation in AC circuit is expressed as:

A $P = I_{rms}$ ´ $V_{rms} \cos 2^{\theta}$

B $P = I$ ´ $V \cos^{\theta}$

C $P = I_{rms}$ ´ $V_{rms} \sin^{\theta}$

D $P = IV \sin 2^{\theta}$

Correct

Unattempted

Incorrect

Q 1/9

Q : In pure resistive A.C. circuit, instantaneous value of voltage or current:

A current lags behind voltage

B current leads voltage by $\frac{\pi}{2}$

C both are in phase

D voltage leads current by $\frac{\pi}{2}$

Explanation

Vector diagram for resistor.

Correct

Unattempted

Incorrect

Q 2/9

Q : In pure resistive A.C. circuit, instantaneous value of voltage or current:

A

B

C

D

Explanation

Vector diagram for resistor.

Correct

Unattempted

Incorrect

Q 2/9

Q : The maximum current I_o passing through a resistance R connected with alternating voltage V_o is given by

A $I_o = R \times V_o$

B $I_o = \frac{V_o}{R}$

C $I_o = \frac{R}{V_o}$

D $I_o = V_o \times R$

Explanation

By Ohm's law.

Correct

Unattempted

Incorrect

Q 3/9

Q : The relation for the resistance according to Ohm's law is given by

A R=IV

B V/I =R

C I/V=R

D 1/IV =R

Correct
Unattempted
Incorrect
Q 4/9

Q : The power dissipated in a resistive circuit is

A $P=I^2R$

B $P=IV$

C $P=V^2/R$

D all of these

Explanation

Text book formula.

Practice Test 50

Correct

Unattempted

Incorrect

Q 5/9

Q : The basic element in a D.C circuit which controls the current or voltage is called

A inductor

B resistor

C capacitor

D voltmeter

Explanation

Resistor can work in AC and DC circuits.

Practice Test 50

Correct

Unattempted

Incorrect

Q 6/9

Q : The symbol used for inductor is

A R

B L

C C

D R-C

1 2 3 4 5

Correct
Unattempted
Incorrect
Q 7/9

Q : At any time 't' the potential difference across the terminals of the resistors is given by

A $V = V_o \sin\omega t$

B $V = V_o \sin\omega f$

C $V = V_o \cos\omega t$

D $V = V_o \cos\omega f$

Explanation

Voltage across resistor changes like source voltage i.e. sinusoidal.

Practice Test 50

Correct

Unattempted

Incorrect

Q 8/9

Q : The basic circuit element or elements in an A.C circuit is

A capacitor

B resistor

C inductor

D all of these

Explanation

All three elements control current in AC.

3 4 5 6 7

Correct

Unattempted

Incorrect

Q 9/9

Q : The power dissipation in AC circuit is expressed as:

A $P = I_{rms}$ ´ $V_{rms} \cos 2\theta$

B $P = I$ ´ $V \cos\theta$

C $P = I_{rms}$ ´ $V_{rms} \sin\theta$

D $P = IV \sin 2\theta$

Explanation

From text book

QUIZZES

Practice Test 51

5 Questions

5 min

Topics

A.C through Capacitor

Start Quiz

04 : 58

USAMA SOHAIL

Q 1/5 | 5 min | Hint

Q : In the capacitive circuit of A.C quantity when q = 0 the slope of q-t curve is

A maximum

B minimum

C zero

D negative

1 2 3 4 5

Q :

The device that allows only the continuous flow of an A.C through a circuit is

A capacitor

B resistor

C reactor

D inductor

04 : 55

USAMA SOHAIL

Q 3/5 | 5 min | Hint

Q : Power dissipation in pure capacitance circuit is:

A infinite

B zero

C minimum

D maximum

04 : 54

USAMA SOHAIL

Q 4/5 5 min Hint

Q : The capacitive reactance to pure D.C. is:

A zero

B infinite

C variable

D equal to inductive reactance

1 2 3 4 5

04 : 52

USAMA SOHAIL

Q 5/5 5 min Hint

Q : Direct current cannot flow through:

A inductor

B resistor

C transistor

D capacitor

Correct

Unattempted

Incorrect

Q 1/5

Q : In the capacitive circuit of A.C quantity when q = 0 the slope of q-t curve is

A maximum

B minimum

C zero

D negative

Explanation

q-t curve is sinusoidal and at q = 0 it cuts x-axis with maximum slope.

Practice Test 51

Correct

Unattempted

Incorrect

Q 2/5

Q :

The device that allows only the continuous flow of an A.C through a circuit is

A capacitor

B resistor

C reactor

D inductor

Explanation

Capacitor cannot conduct DC continuously.

1 2 3 4 5

Practice Test 51

Correct

Unattempted

Incorrect

Q 3/5

Q : Power dissipation in pure capacitance circuit is:

A infinite

B zero

C minimum

D maximum

1 2 3 4 5

Practice Test 51

Correct

Unattempted

Incorrect

Q 4/5

Q : The capacitive reactance to pure D.C. is:

A zero

B infinite

C variable

D equal to inductive reactance

Practice Test 51

USAMA SOHAIL

Correct

Unattempted

Incorrect

Q 5/5

Q : Direct current cannot flow through:

A inductor

B resistor

C transistor

D capacitor

1 2 3 4 5

QUIZZES

Practice Test 52

5 Questions

5 min

Topics

A.C through Inductor

Start Quiz

04 : 59

USAMA SOHAIL

Q 1/5 | 5 min | Hint

Q : A pure inductive coil is that which has

A None impedance

B No ohmic resistance

C Same ohmic resistance

D None of these

04 : 57

USAMA SOHAIL

Q 2/5 5 min Hint

Q : The instantaneous voltage across a pure inductance is

A In phase with current

B Lags the current by 90^o

C Leads the current by 90^o

D None of these

1 2 3 4 5

04 : 56

USAMA SOHAIL

Q 3/5 5 min Hint

Q : Radio frequency choke is

A Iron cored

B Air Cored

C Air as well as iron cored

D None of these

04 : 55

USAMA SOHAIL

Q 4/5 5 min Hint

Q : The inductive reactance can be expressed by the relation

A $X_L = \frac{1}{\omega L}$

B $X_L = \frac{1}{2\pi\omega L}$

C $X_L = \omega L$

D $X_L = \frac{\omega L}{2\pi f}$

04 : 53

USAMA SOHAIL

Q 5/5 5 min Hint

Q : Reactance of inductor is very high when there is

A high frequency current

B low frequency current

C high frequency inductor

D low frequency inductor

1 2 3 4 5

Correct

Unattempted

Incorrect

Q 1/5

Q : A pure inductive coil is that which has

A None impedance

B No ohmic resistance

C Same ohmic resistance

D None of these

Explanation

Definition of inductive coil.

Practice Test 52

Correct

Unattempted

Incorrect

Q 2/5

Q : The instantaneous voltage across a pure inductance is

A In phase with current

B Lags the current by 90^{0}

C Leads the current by 90^{0}

D None of these

Correct

Unattempted

Incorrect

Q 3/5

Q : Radio frequency choke is

A Iron cored

B Air Cored

C Air as well as iron cored

D None of these

Explanation

Depends upon the dielectric of capacitor.

Correct

Unattempted

Incorrect

Q 4/5

Q : The inductive reactance can be expressed by the relation

A $X_L = \frac{1}{\omega L}$

B $X_L = \frac{1}{2\pi\omega L}$

C $X_L = \omega L$

D $X_L = \frac{\omega L}{2\pi f}$

Explanation

$$\frac{V_{rms}}{I_{rms}} = X_L = \omega L$$

Correct

Unattempted

Incorrect

Q 5/5

Q : Reactance of inductor is very high when there is

A high frequency current

B low frequency current

C high frequency inductor

D low frequency inductor

Explanation

$X_L \propto f$

QUIZZES

Practice Test 53

5 Questions

5 min

Topics

R.C series circuit and R.L series circuit

Start Quiz

04 : 59

USAMA SOHAIL

Q 1/5 5 min Hint

Q : At high frequency, the current through a capacitor of A.C circuit will be

A large

B small

C infinite

D zero

1 2 3 4 5

04 : 57

USAMA SOHAIL

Q 2/5 5 min Hint

Q : With increase of frequency of A.C supply, the inductive reactance is

A Decrease

B Increase as square of frequency

C Remain unchanged

D Increase as directly to frequency

1 2 3 4 5

04 : 56

USAMA SOHAIL

Q 3/5 5 min Hint

Q : The phase angle in an R.L series circuit is expressed as

A $\theta = \tan^{-1}\left(\frac{\omega L}{R}\right)$

B $\theta = \tan\left(\frac{\omega L}{R}\right)$

C $\theta = \tan^{-1}\left(\frac{R}{\omega L}\right)$

D None of these

1 2 3 4 5

04 : 55

USAMA SOHAIL

Q 4/5 5 min Hint

Q : In R-L series circuits

A the current lags the applied voltage

B the voltage lags the applied current

C the current leads the applied voltage

D none of these

1 2 3 4 5

Q : The potential across the inductance leads the current by

A $\frac{\pi}{3}$

B π

C $\frac{2\pi}{3}$

D $\frac{\pi}{2}$

Correct

Unattempted

Incorrect

Q 1/5

Q : At high frequency, the current through a capacitor of A.C circuit will be

A large

B small

C infinite

D zero

Explanation

$$I = \frac{V}{X_C} = (2\pi f C)V$$

Correct

Unattempted

Incorrect

Q 2/5

Q : With increase of frequency of A.C supply, the inductive reactance is

A Decrease

B Increase as square of frequency

C Remain unchanged

D Increase as directly to frequency

Explanation

$X_L = 2\pi f L$

Correct

Unattempted

Incorrect

Q 3/5

Q : The phase angle in an R.L series circuit is expressed as

A $\theta = \tan^{-1}\left(\frac{\omega L}{R}\right)$

B $\theta = \tan\left(\frac{\omega L}{R}\right)$

C $\theta = \tan^{-1}\left(\frac{R}{\omega L}\right)$

D None of these

Explanation

$$\theta = \tan^{-1}\left(\frac{X_L}{R}\right) = \tan^{-1}\left(\frac{\omega L}{R}\right)$$

Correct

Unattempted

Incorrect

Q 4/5

Q : In R-L series circuits

A the current lags the applied voltage

B the voltage lags the applied current

C the current leads the applied voltage

D none of these

Correct

Unattempted

Incorrect

Q 5/5

Q : The potential across the inductance leads the current by

A $\frac{\pi}{3}$

B π

C $\frac{2\pi}{3}$

D $\frac{\pi}{2}$

QUIZZES

Practice Test 54

5 Questions

5 min

Topics

Series Resonance Circuit

Start Quiz

04 : 56

USAMA SOHAIL

Q 1/5 5 min Hint

Q : Resonating frequency of RLC series circuit is f_r = _____

A $\frac{2\pi}{\sqrt{LC}}$

B $\frac{1}{2\pi}\sqrt{LC}$

C $\frac{1}{2\pi\sqrt{LC}}$

D $2\pi\sqrt{LC}$

04 : 54

USAMA SOHAIL

Q 2/5 5 min Hint

Q : At resonance RLC series circuit shows the behavior of

A pure resistive circuit

B pure capacitive circuit

C pure inductive circuit

D pure RLC circuit

Q 3/5 5 min Hint

Q : At resonance V_L, in R-L-C series circuit

A the voltage drop across capacitance

B the voltage drop across inductance

C the current drop across inductance

D the current drop across capacitance

04 : 51

USAMA SOHAIL

Q 4/5 5 min Hint

Q : At resonance the value of current in RLC series circuit is equal to

A V_0/R

B V_0R

C $1/2$

D Zero

04 : 50

USAMA SOHAIL

Q 5/5 5 min Hint

Q : In R-L-C circuit, the energy is dissipated in:

A R only

B R and L

C R and C

D R, L and C

1 2 3 4 5

Correct

Unattempted

Incorrect

Q 1/5

Q : Resonating frequency of RLC series circuit is f_r = _____

A $\frac{2\pi}{\sqrt{LC}}$

B $\frac{1}{2\pi}\sqrt{LC}$

C $\frac{1}{2\pi\sqrt{LC}}$

D $2\pi\sqrt{LC}$

Explanation

$$X_L = X_C \Rightarrow 2\pi f_r L \Rightarrow f_r = \frac{1}{2\pi\sqrt{LC}}$$

Correct

Unattempted

Incorrect

Q 2/5

Q : At resonance RLC series circuit shows the behavior of

A pure resistive circuit

B pure capacitive circuit

C pure inductive circuit

D pure RLC circuit

Explanation

X_L cancel out X_C at resonance.

Practice Test 54

USAMA SOHAIL

Correct

Unattempted

Incorrect

Q 3/5

Q : At resonance V_L, in R-L-C series circuit

A the voltage drop across capacitance

B the voltage drop across inductance

C the current drop across inductance

D the current drop across capacitance

Explanation

$V_L = I_{rms} X_L$

Correct

Unattempted

Incorrect

Q 4/5

Q : At resonance the value of current in RLC series circuit is equal to

A V_0/R

B V_0R

C $1/2$

D Zero

Explanation

$$Z = R \text{ so}, P = \frac{V_o}{R}$$

Correct

Unattempted

Incorrect

Q 5/5

Q : In R-L-C circuit, the energy is dissipated in:

A R only

B R and L

C R and C

D R, L and C

Explanation

Capacitor and inductor stores energy.

QUIZZES

Practice Test 55

5 Questions

5 min

Topics

Parallel Resonance Circuit

Start Quiz

04 : 58

USAMA SOHAIL

Q 1/5

5 min

Hint

Q : At resonance frequency, the impedance of RLC parallel circuit is

A zero

B infinite

C minimum

D maximum

1 2 3 4 5

Q 2/5 5 min Hint

Q : The inductance (L) has a resistance which is

A negligible small

B zero

C very large

D infinite

04 : 56

USAMA SOHAIL

Q 3/5 5 min Hint

Q : In L-C parallel circuit, the current at the resonance frequency is

A minimum

B maximum

C zero

D infinite

04 : 55

USAMA SOHAIL

Q 4/5 5 min Hint

Q : At the resonance the current is minimum in L-C parallel circuit, the power factor is

A 0

B 1

C -1

D infinite

1 2 3 4 5

04 : 53

USAMA SOHAIL

Q 5/5 | 5 min | Hint

Q : The L-C parallel circuit is excited by an alternating source of voltage whose frequency

A could be varied

B could not be varied

C is zero

D none of these

Correct

Unattempted

Incorrect

Q 1/5

Q : At resonance frequency, the impedance of RLC parallel circuit is

A zero

B infinite

C minimum

D maximum

Explanation

Due to parallel connection of C and L.

Correct

Unattempted

Incorrect

Q 2/5

Q : The inductance (L) has a resistance which is

A negligible small

B zero

C very large

D infinite

Correct
Unattempted
Incorrect
Q 3/5

Q : In L-C parallel circuit, the current at the resonance frequency is

A minimum

B maximum

C zero

D infinite

Explanation

since impedance at resonance is maximum.

Practice Test 55 **USAMA SOHAIL**

Correct Unattempted

Incorrect Q 4/5

Q : At the resonance the current is minimum in L-C parallel circuit, the power factor is

A 0

B 1

C -1

D infinite

Explanation

$p.f = \cos(0°) = 1$

Correct

Unattempted

Incorrect

Q 5/5

Q : The L-C parallel circuit is excited by an alternating source of voltage whose frequency

A could be varied

B could not be varied

C is zero

D none of these

Explanation

AC source with variable frequency.

QUIZZES

Practice Test 56

5 Questions

5 min

Topics

Three Phase A.C Supply

Start Quiz

04 : 59

USAMA SOHAIL

Q 1/5 | 5 min | Hint

Q : The phase difference between each pair of coils of a three phase A.C. generator is

A 0^{o}

B 90^{o}

C 120^{o}

D 180^{o}

04 : 57

USAMA SOHAIL

Q 2/5 | 5 min | Hint

Q : The voltage across any two live lines in three phase AC supply is

A 400V

B 120V

C 230V

D 440V

1 2 3 4 5

04 : 56

USAMA SOHAIL

Q 3/5 | 5 min | Hint

Q : An A.C generator consists of a coil with

A with a slip ring

B with a pair of slip rings

C with a pair of magnet

D with a Commutator

1 2 3 4 5

04 : 55

USAMA SOHAIL

Q 4/5 5 min Hint

Q : When the combination of three coils rotate in three phase A.C generator, then

A a voltage is generated

B 3 alternating voltage generated

C no voltage generate

D 2 alternating voltage generated

Q : The voltage across each of lines connected to terminals A,B & C of machine and the neutral line in three phase AC supply is

A 400V

B 120V

C 230V

D 440V

Correct

Unattempted

Incorrect

Q 1/5

Q : The phase difference between each pair of coils of a three phase A.C. generator is

A 0°

B 90°

C 120°

D 180°

Correct

Unattempted

Incorrect

Q 2/5

Q : The voltage across any two live lines in three phase AC supply is

A 400V

B 120V

C 230V

D 440V

Explanation

$V_{p-p} = 400V$

Correct
Unattempted
Incorrect
Q 3/5

Q : An A.C generator consists of a coil with

A with a slip ring

B with a pair of slip rings

C with a pair of magnet

D with a Commutator

Explanation

To top alternating current.

Correct
Unattempted
Incorrect
Q 4/5

Q : When the combination of three coils rotate in three phase A.C generator, then

A a voltage is generated

B 3 alternating voltage generated

C no voltage generate

D 2 alternating voltage generated

Explanation

Each coil generates it own voltage due to flux linkage.

Correct

Unattempted

Incorrect

Q 5/5

Q : The voltage across each of lines connected to terminals A,B & C of machine and the neutral line in three phase AC supply is

A 400V

B 120V

C 230V

D 440V

Explanation

Line to neutral voltage is 230V.

QUIZZES

Practice Test 57

5 Questions

5 min

Topics

Principle of Metal Detectors

Start Quiz

Q 1/5 5 min Hint

Q : Choke consumes extremely small:

A current

B charge

C power

D potential

04 : 57

USAMA SOHAIL

Q 2/5 5 min Hint

Q : Metal detector works with the help of

A RC circuit

B RL circuit

C LC circuit

D RLC series circuit

1 2 3 4 5

04 : 56

USAMA SOHAIL

Q 3/5 5 min Hint

Q : An L-C circuit behaves like an

A oscillating pendulum

B oscillating mass-spring system

C Amplifier

D all of these

1 2 3 4 5

Q : In metal detector the energy oscillates between

A resistor and capacitor

B capacitor and resonance

C inductor and capacitor

D resistor and inductor

04 : 53

USAMA SOHAIL

Q 5/5 5 min Hint

Q : The metal detectors are used to locate

A buried metal objects

B metal at security checks

C both a and b

D none of these

1 2 3 4 5

Correct
Unattempted
Incorrect
Q 1/5

Q : Choke consumes extremely small:

A current

B charge

C power

D potential

Correct
Unattempted
Incorrect
Q 2/5

Q : Metal detector works with the help of

A RC circuit

B RL circuit

C LC circuit

D RLC series circuit

Explanation

LC parallel circuit.

Correct

Unattempted

Incorrect

Q 3/5

Q : An L-C circuit behaves like an

A oscillating pendulum

B oscillating mass-spring system

C Amplifier

D all of these

Explanation

Amplifies the frequency difference.

Practice Test 57

Correct

Unattempted

Incorrect

Q 4/5

Q : In metal detector the energy oscillates between

A resistor and capacitor

B capacitor and resonance

C inductor and capacitor

D resistor and inductor

Explanation

LC parallel circuit.

Practice Test 57

Correct

Unattempted

Incorrect

Q 5/5

Q : The metal detectors are used to locate

A buried metal objects

B metal at security checks

C both a and b

D none of these

Explanation

Detection of metals.

QUIZZES

Practice Test 58

5 Questions

5 min

Topics

Electromagnetic Waves

Start Quiz

04 : 59

Q 1/5 5 min Hint

Q : The electromagnetic spectrum contains:

A radio waves

B X-rays

C microwaves

D all of these

1 2 3 4 5

04 : 57

USAMA SOHAIL

Q 2/5 5 min Hint

Q : Who proved that light waves are electromagnetic?

A Faraday

B Einstein

C Maxwell

D Enderson

1 2 3 4 5

Q 3/5 5 min Hint

Q : In electromagnetic phenomenon the magnetic field, electric field and direction of their propagation are

A opposite to each other

B anti-parallel to each other

C parallel

D mutually orthogonal

04 : 55

USAMA SOHAIL

Q 4/5 5 min Hint

Q : The formula for speed of electromagnetic waves is

A $c = f\lambda$

B $v = c\lambda$

C $c = f/\lambda$

D $c = \lambda/f$

1 2 3 4 5

04 : 53

USAMA SOHAIL

Q 5/5 5 min Hint

Q : Which one of the following requires a material medium for their propagation

A heat waves

B ` X-rays

C sound waves

D ultraviolet rays

1 2 3 4 5

Correct

Unattempted

Incorrect

Q 1/5

Q : The electromagnetic spectrum contains:

A radio waves

B X-rays

C microwaves

D all of these

Explanation

Regions of spectrum.

Practice Test 58

Correct

Unattempted

Incorrect

Q 2/5

Q : Who proved that light waves are electromagnetic?

A Faraday

B Einstein

C Maxwell

D Enderson

Explanation

Maxwell explanation.

Correct

Unattempted

Incorrect

Q 3/5

Q : In electromagnetic phenomenon the magnetic field, electric field and direction of their propagation are

A opposite to each other

B anti-parallel to each other

C parallel

D mutually orthogonal

Explanation

All three are at 90^o.

Correct
Unattempted
Incorrect
Q 4/5

Q : The formula for speed of electromagnetic waves is

A $c = f\lambda$

B $v = c\lambda$

C $c = f/\lambda$

D $c = \lambda/f$

Explanation

General wave equation.

Correct
Unattempted
Incorrect
Q 5/5

Q : Which one of the following requires a material medium for their propagation

A heat waves

B ` X-rays

C sound waves

D ultraviolet rays

QUIZZES

Practice Test 59

5 Questions

5 min

Topics

Principle of generation , transimission and reception of EMW

Start Quiz

04 : 58

USAMA SOHAIL

Q 1/5 5 min Hint

Q : By shaking an electrically charged object to and fro, it is produced

A electromagnetic waves

B electric waves

C mechanical waves

D matter waves

1 2 3 4 5

Q 2/5 5 min Hint

Q : The electromagnetic waves which are propagated out in space from radio transmitting antenna are known as

A radio waves

B infrared waves

C mechanical waves

D matter waves

04 : 55

USAMA SOHAIL

Q 3/5 5 min Hint

Q : Which electromagnetic waves emitted from antenna

A stationary waves

B light waves

C transverse waves

D longitudinal waves

1 2 3 4 5

04 : 54

USAMA SOHAIL

Q 4/5 | 5 min | Hint

Q : The voltage appears across a receiving antenna placed in space is usually due to the

A radio waves of large number of frequencies

B longitudinal waves of high frequency

C light waves

D radio waves of single frequencies

04 : 53

USAMA SOHAIL

Q 5/5 | 5 min | Hint

Q : When we accelerate the charges, which type of waves are produced:

A mechanical waves

B traveling waves

C stationary waves

D electromagnetic waves

1 2 3 4 5

Correct

Unattempted

Incorrect

Q 1/5

Q : By shaking an electrically charged object to and fro, it is produced

A electromagnetic waves

B electric waves

C mechanical waves

D matter waves

Explanation

It creatres changing $\vec{E}$ and then changing $\vec{B}$

Practice Test 59

Correct

Unattempted

Incorrect

Q 2/5

Q : The electromagnetic waves which are propagated out in space from radio transmitting antenna are known as

A radio waves

B infrared waves

C mechanical waves

D matter waves

Explanation

Transmitting antenna produces radio waves.

Practice Test 59

Correct

Unattempted

Incorrect

Q 3/5

Q : Which electromagnetic waves emitted from antenna

A stationary waves

B light waves

C transverse waves

D longitudinal waves

Explanation

Antenna produce transverse waves.

Correct

Unattempted

Incorrect

Q 4/5

Q : The voltage appears across a receiving antenna placed in space is usually due to the

A radio waves of large number of frequencies

B longitudinal waves of high frequency

C light waves

D radio waves of single frequencies

Explanation

Different signal impinging upon antenna.

Correct

Unattempted

Incorrect

Q 5/5

Q : When we accelerate the charges, which type of waves are produced:

A mechanical waves

B traveling waves

C stationary waves

D electromagnetic waves

Explanation

Changing electric and magnetic fields.

QUIZZES

Practice Test 60

5 Questions

5 min

Topics

Modulation

Start Quiz

04 : 59

USAMA SOHAIL

Q 1/5 5 min Hint

Q : The process of combining low frequency signal with a high frequency radio waves is called

A amplification

B resonance

C demodulation

D modulation

1 2 3 4 5

04 : 57

USAMA SOHAIL

Q 2/5 5 min Hint

Q : During frequency modulation when amplitude of signal is zero, the frequency of carrier waves is

A zero

B maximum

C minimum

D normal

04 : 56

USAMA SOHAIL

Q 3/5 | 5 min | Hint

Q : For modulation purpose, high frequency radio waves are called:

A carrier waves

B transverse waves

C radio waves

D longitudinal waves

04 : 55

USAMA SOHAIL

Q 4/5 5 min Hint

Q : Modulation is achieved by changing the:

A frequency and amplitude of the carrier waves

B only frequency of the carrier wave

C only amplitude of the carrier wave

D none of these

04 : 54

USAMA SOHAIL

Q 5/5 5 min Hint

Q : As a result of modulation, the resultant wave is called

A de-modulated carrier waves

B carrier waves

C both a & b

D modulated carrier waves

Correct
Unattempted
Incorrect
Q 1/5

Q : The process of combining low frequency signal with a high frequency radio waves is called

A amplification

B resonance

C demodulation

D modulation

Explanation

Definition of modulation.

Practice Test 60

USAMA SOHAIL

Correct

Unattempted

Incorrect

Q 2/5

Q : During frequency modulation when amplitude of signal is zero, the frequency of carrier waves is

A zero

B maximum

C minimum

D normal

Explanation

Frequency of carrier wave change with amplitude of signal.

Correct

Unattempted

Incorrect

Q 3/5

Q : For modulation purpose, high frequency radio waves are called:

A carrier waves

B transverse waves

C radio waves

D longitudinal waves

Explanation

Process of modulation.

Correct
Unattempted
Incorrect
Q 4/5

Q : Modulation is achieved by changing the:

A frequency and amplitude of the carrier waves

B only frequency of the carrier wave

C only amplitude of the carrier wave

D none of these

Explanation

Definition of AM and FM.

Practice Test 60

USAMA SOHAIL

Correct
Unattempted
Incorrect
Q 5/5

Q : As a result of modulation, the resultant wave is called

A de-modulated carrier waves

B carrier waves

C both a & b

D modulated carrier waves

Explanation

Process of modulation.

1 2 3 4 5

QUIZZES

Practice Test 61

5 Questions

5 min

Topics

Classification of Solids

Start Quiz

04 : 58

USAMA SOHAIL

1/5 5 min Hint

Q : Polymer solids are:

A Order solids

B Disorder solids

C in b/w order and disorder

D Neither type

1 2 3 4 5

04 : 57

USAMA SOHAIL

Q 2/5 5 min Hint

Q : Amorphous solids are:

A Order solid

B Disorder solid

C In b/w order and disorder

D None of the above

04 : 56

USAMA SOHAIL

Q 3/5 | 5 min | Hint

Q : The temperature at which the vibrations becomes so great that the structure of the crystal breaks is called:

A Melting point

B Critical temperature

C Boiling point

D None of these

04 : 54

USAMA SOHAIL

Q 4/5 5 min Hint

Q : Examples of crystalline solids are:

A Copper

B NaCl

C Zirconia

D All of above

1 2 3 4 5

04 : 53

USAMA SOHAIL

Q 5/5 5 min Hint

Q : Which one of the following is crystalline solid:

A zirconia

B glassy solid

C natural rubber

D polystyrene

1 2 3 4 5

Correct
Unattempted
Incorrect
Q 1/5

Q : Polymer solids are:

A Order solids

B Disorder solids

C in b/w order and disorder

D Neither type

Explanation

Definition of polymeric solids.

Correct

Unattempted

Incorrect

Q 2/5

Q : Amorphous solids are:

A Order solid

B Disorder solid

C In b/w order and disorder

D None of the above

Explanation

No specific arrangement of molecules.

Correct

Unattempted

Incorrect

Q 3/5

Q : The temperature at which the vibrations becomes so great that the structure of the crystal breaks is called:

A Melting point

B Critical temperature

C Boiling point

D None of these

Explanation

Definition of melting point.

Correct

Unattempted

Incorrect

Q 4/5

Q : Examples of crystalline solids are:

A Copper

B NaCl

C Zirconia

D All of above

Explanation

Regular structure.

Correct

Unattempted

Incorrect

Q 5/5

Q : Which one of the following is crystalline solid:

A zirconia

B glassy solid

C natural rubber

D polystyrene

Explanation

Example of crystalline solid.

QUIZZES

Practice Test 62

5 Questions

5 min

Topics

Mechanical Properties of Solids, Deformation in solids , stress and strain, Elastic Constants, Elastic limits & yield strength, Strain energy in deformed materials

Start Quiz

04 : 58

USAMA SOHAIL

Q 1/5 5 min Hint

Q : When a force is applied on a wire of length 'l' which results in an increase in length then the stress is known as

A tensile stress

B tensile deformation

C shear stress

D volumetric stress

04 : 57

USAMA SOHAIL

Q 2/5 5 min Hint

Q : When a stress changes the shape of a body, it is called

A volumetric stress

B shear stress

C tensile stress

D compressional stress

1 2 3 4 5

04 : 56

USAMA SOHAIL

Q 3/5 5 min Hint

Q : Stress is equal to

A force

B $y(\varepsilon)$

C $\frac{y}{\varepsilon}$

D $\frac{1}{\varepsilon}$

1 2 3 4 5

04 : 54

USAMA SOHAIL

Q 4/5 5 min Hint

Q : Substances which break just after the elastic limit is reached are called as

A ductile substances

B hard substances

C brittle substances

D soft substances

04 : 53

USAMA SOHAIL

Q 5/5 | 5 min | Hint

Q : Strain energy in deformed material is proportional to

A square of the extension

B under root of the extension

C cube root of the extension

D extension produced

1 2 3 4 5

Correct

Unattempted

Incorrect

Q 1/5

Q : When a force is applied on a wire of length 'l' which results in an increase in length then the stress is known as

A tensile stress

B tensile deformation

C shear stress

D volumetric stress

Correct

Unattempted

Incorrect

Q 2/5

Q : When a stress changes the shape of a body, it is called

A volumetric stress

B shear stress

C tensile stress

D compressional stress

Correct
Unattempted
Incorrect
Q 3/5

Q : Stress is equal to

A force

B $y(\varepsilon)$

C $\frac{y}{\varepsilon}$

D $\frac{1}{\varepsilon}$

Explanation

$y = \frac{\sigma}{\varepsilon} \Rightarrow \sigma = y(\varepsilon)$

Correct
Unattempted
Incorrect
Q 4/5

Q : Substances which break just after the elastic limit is reached are called as

A ductile substances

B hard substances

C brittle substances

D soft substances

Correct
Unattempted
Incorrect
Q 5/5

Q : Strain energy in deformed material is proportional to

A

B

C

D

Explanation

$$Energy = \frac{1}{2}\frac{EA\ell_1^2}{L}$$

Correct

Unattempted

Incorrect

Q 5/5

Q : Strain energy in deformed material is proportional to

A square of the extension

B under root of the extension

C cube root of the extension

D extension produced

Explanation

$$Energy = \frac{1}{2}\frac{EA\ell_1^2}{L}$$

QUIZZES

Practice Test 63

5 Questions

5 min

Topics

Electrical properties of Solids, Energy band theory, Intrinsic and extrinsic semi-conductors

Start Quiz

04 : 59

USAMA SOHAIL

Q 1/5 | 5 min | Hint

Q : The Si and Ge lies in the ________ group of periodic table

A 3^{rd}

B 4^{th}

C 5^{th}

D 1^{st}

04 : 57

USAMA SOHAIL

Q 2/5 5 min Hint

Q : Those substances which have valence electrons tightly bound to their atoms are called

A conductors

B insulators

C super conductors

D semi conductors

1 2 3 4 5

04 : 55

USAMA SOHAIL

3/5 5 min Hint

Q : The doped semi-conductors materials are called

A intrinsic semi-conductors

B extrinsic insulators

C extrinsic semi-conductors

D intrinsic conductors

04 : 54

USAMA SOHAIL

Q 4/5 5 min Hint

Q : The band in atom containing conductive electrons, according to “band theory of solids” is

A conduction band

B valence band

C forbidden band

D first conduction band then forbidden band

04 : 52

USAMA SOHAIL

Q 5/5 — 5 min — Hint

Q : When a silicon crystal is doped with a pentavalent element, it becomes

A p-type semiconductor

B n-type semiconductor

C intrinsic semiconductor

D extrinsic semiconductor Q

1 2 3 4 5

Correct

Unattempted

Incorrect

Q 1/5

Q : The Si and Ge lies in the ________ group of periodic table

A 3^{rd}

B 4^{th}

C 5^{th}

D 1^{st}

Explanation

4^{th} group.

Correct
Unattempted
Incorrect
Q 2/5

Q : Those substances which have valence electrons tightly bound to their atoms are called

A conductors

B insulators

C super conductors

D semi conductors

Explanation

Insulators do not have free electrons.

Correct

Unattempted

Incorrect

Q 3/5

Q : The doped semi-conductors materials are called

A intrinsic semi-conductors

B extrinsic insulators

C extrinsic semi-conductors

D intrinsic conductors

Correct
Unattempted
Incorrect
Q 4/5

Q : The band in atom containing conductive electrons, according to “band theory of solids” is

A conduction band

B valence band

C forbidden band

D first conduction band then forbidden band

Explanation

Conduction bands contain conductive electrons.

Practice Test 63

Correct

Unattempted

Incorrect

Q 5/5

Q : When a silicon crystal is doped with a pentavalent element, it becomes

A p-type semiconductor

B n-type semiconductor

C intrinsic semiconductor

D extrinsic semiconductor Q

QUIZZES

Practice Test 64

5 Questions

5 min

Topics

Superconductors

Start Quiz

04 : 59

USAMA SOHAIL

Q 1/5 5 min Hint

Q : The first super conductor was discovered in:

A 1923

B 1918

C 1905

D 1911

1 2 3 4 5

04 : 57

USAMA SOHAIL

Q 2/5 | 5 min | Hint

Q : Recently a complex crystalline structure known as yttrium barium copper oxide ($YBa_2 Cu_3 O_7$) have reported to become super conductor at:

A 163 K

B 169 K

C 200 K

D 100 K

04 : 56

USAMA SOHAIL

Q 3/5 5 min Hint

Q : Yttrium barium copper oxide ($YBa_2Cu_3O_7$) become superconductor at:

A 163 K

B -100^0C

C Both (A) and (B)

D None of these

1 2 3 4 5

04 : 54

USAMA SOHAIL

Q 4/5 5 min Hint

Q : The formula for Yttrium barium copper oxide is

A $Y_2Ba_2Cu_3\,O_7$

B $YBa_2Cu_3\,O_7$.

C $YBa_3Cu_2\,O_7$

D $Y_2Ba_2Cu_3\,O_6$

1 2 3 4 5

04 : 53

USAMA SOHAIL

Q 5/5 5 min Hint

Q : The temperature 77K is the

A melting point of nitrogen

B boiling point of nitrogen

C boiling point of hydrogen

D melting point of hydrogen

1 2 3 4 5

Practice Test 64

Correct

Unattempted

Incorrect

Q 1/5

Q : The first super conductor was discovered in:

A 1923

B 1918

C 1905

D 1911

Explanation

Discovered by kmaerlingh ornes.

Correct

Unattempted

Incorrect

Q 2/5

Q : Recently a complex crystalline structure known as yttrium barium copper oxide ($YBa_2 Cu_3 O_7$) have reported to become super conductor at:

A 163 K

B 169 K

C 200 K

D 100 K

Explanation

Critical temperature.

Correct

Unattempted

Incorrect

Q 3/5

Q : Yttrium barium copper oxide ($YBa_2Cu_3O_7$) become superconductor at:

A 163 K

B -100^0C

C Both (A) and (B)

D None of these

Explanation

$163k = -100^oC$

Correct

Unattempted

Incorrect

Q 4/5

Q : The formula for Yttrium barium copper oxide is

A $Y_2Ba_2Cu_3 O_7$

B $YBa_2Cu_3 O_7$.

C $YBa_3Cu_2 O_7$

D $Y_2Ba_2Cu_3 O_6$

Explanation

A complex crystalline structure.

Practice Test 64

Correct

Unattempted

Incorrect

Q 5/5

Q : The temperature 77K is the

A melting point of nitrogen

B boiling point of nitrogen

C boiling point of hydrogen

D melting point of hydrogen

Explanation

Boiling point.

QUIZZES

Practice Test 65

5 Questions

5 min

Topics

Magnetic properties of Solids, Hysteresis Loop

Start Quiz

04 : 59

USAMA SOHAIL

Q 1/5 5 min Hint

Q : An atom having resultant magnetic field:

A behaves like a tiny magnet

B is called magnetic dipole

C is called paramagnetic

D all of above

1 2 3 4 5

04 : 57

USAMA SOHAIL

Q 2/5 | 5 min | Hint

Q : A pentavalent impurity in Si:

A a free electron and a free hole

B a free hole

C a free electron

D No free particle

Q 3/5 5 min Hint

Q : The phenomenon in which magnetization reduce to zero by reversing the magnetizing current is called

A saturation

B coercivity

C retentivity

D hysteresis loss

04 : 55

USAMA SOHAIL

Q 4/5 5 min Hint

Q : A single domain in ferromagnetic substance contain nearly

A $10^{8}--10^{9}$

B $10^{12}--10^{16}$

C $10^{15}--10^{20}$

D $10^{12}--10^{20}$

04 : 53

USAMA SOHAIL

Q 5/5 5 min Hint

Q : Which of the following has the least hysteresis loop area :

A steel

B wrought iron

C soft iron

D cobalt

1 2 3 4 5

Correct

Unattempted

Incorrect

Q 1/5

Q : An atom having resultant magnetic field:

A behaves like a tiny magnet

B is called magnetic dipole

C is called paramagnetic

D all of above

Explanation

Magnetic field is not canceled out.

Practice Test 65

USAMA SOHAIL

Correct

Unattempted

Incorrect

Q 2/5

Q : A pentavalent impurity in Si:

A a free electron and a free hole

B a free hole

C a free electron

D No free particle

1 2 3 4 5

Correct

Unattempted

Incorrect

Q 3/5

Q : The phenomenon in which magnetization reduce to zero by reversing the magnetizing current is called

A saturation

B coercivity

C retentivity

D hysteresis loss

Correct

Unattempted

Incorrect

Q 4/5

Q : A single domain in ferromagnetic substance contain nearly

A $10^8 - - 10^9$

B $10^{12} - - 10^{16}$

C $10^{15} - - 10^{20}$

D $10^{12} - - 10^{20}$

Practice Test 65

Correct

Unattempted

Incorrect

Q 5/5

Q : Which of the following has the least hysteresis loop area :

A steel

B wrought iron

C soft iron

D cobalt

Explanation

By hysteresis loop area.

QUIZZES

Practice Test 66

5 Questions

5 min

Topics

Biased p-n junction, p-n junction, Forward biased p-n junction, Reverse biased p-n junction

Start Quiz

04 : 59

USAMA SOHAIL

Q 1/5 5 min Hint

Q : A potential difference is developed across the depletion region of p-n junction due to:

A negative ions

B positive ions

C both positive and negative ions

D none of these

1 2 3 4 5

04 : 57

USAMA SOHAIL

Q 2/5 5 min Hint

Q : In forward biased situation, as the biasing voltage is increased, the current:

A does not change

B decreases

C also increases

D none of these

1 2 3 4 5

04 : 56

Q 3/5 5 min Hint

Q : The most commonly used semi-conductor is

A germanium

B silicon

C gallium

D aluminium

1 2 3 4 5

04 : 55

USAMA SOHAIL

Q 4/5 | 5 min | Hint

Q : Potential difference across two terminal of silicon diode at 300 K is:

A 0.3 V

B 0.7 V

C 0.9 V

D 1.2 V

04 : 53

USAMA SOHAIL

Q 5/5 | 5 min | Hint

Q : When a pn-junction is reverse biased the depletion region is

A widened

B narrowed

C normal

D none of these

1 2 3 4 5

Practice Test 66

Correct

Unattempted

Incorrect

Q 1/5

Q : A potential difference is developed across the depletion region of p-n junction due to:

A negative ions

B positive ions

C both positive and negative ions

D none of these

Explanation

Due to initial diffusion of charges.

1 2 3 4 5

Correct

Unattempted

Incorrect

Q 2/5

Q : In forward biased situation, as the biasing voltage is increased, the current:

A does not change

B decreases

C also increases

D none of these

Explanation

In forward biased, I is proportional to V.

Correct

Unattempted

Incorrect

Q 3/5

Q : The most commonly used semi-conductor is

A germanium

B silicon

C gallium

D aluminium

Explanation

Mostly used in practical devices.

Correct

Unattempted

Incorrect

Q 4/5

Q : Potential difference across two terminal of silicon diode at 300 K is:

A 0.3 V

B 0.7 V

C 0.9 V

D 1.2 V

Correct

Unattempted

Incorrect

Q 5/5

Q : When a pn-junction is reverse biased the depletion region is

A widened

B narrowed

C normal

D none of these

QUIZZES

Practice Test 67

5 Questions

5 min

Topics

Rectification, Rectification ,half wave rectification, Full wave rectification

Start Quiz

04 : 59

USAMA SOHAIL

Q 1/5 5 min Hint

Q : During the interval $0 \xrightarrow{} \frac{T}{2}$ the forward biased diode offers

A very small resistance

B very high resistance

C very small current flow through it

D zero resistance

1 2 3 4 5

04 : 57

USAMA SOHAIL

Q 2/5 | 5 min | Hint

Q : For rectification we use

A transformer

B diode

C choke

D generator

1 2 3 4 5

04 : 56

USAMA SOHAIL

Q 3/5 5 min Hint

Q : The output voltage of a rectifier is:

A smooth

B pulsating

C perfectly direct

D alternating

1 2 3 4 5

04 : 55

USAMA SOHAIL

Q 4/5 5 min Hint

Q : Pulsating DC can be made smooth by using a circuit known as:

A filter

B tank

C acceptor

D all of these

04 : 53

USAMA SOHAIL

Q 5/5 5 min Hint

Q : Minimum number of semi-conductor diodes required for full wave rectification are:

A 1

B 2

C 3

D 4

Correct

Unattempted

Incorrect

Q 1/5

Q : During the interval $0 \xrightarrow{0} \frac{T}{2}$ the forward biased diode offers

A very small resistance

B very high resistance

C very small current flow through it

D zero resistance

Explanation

resistance of few ohms in forward biase.

Practice Test 67

Correct

Unattempted

Incorrect

Q 2/5

Q : For rectification we use

A transformer

B diode

C choke

D generator

Correct
Unattempted
Incorrect
Q 3/5

Q : The output voltage of a rectifier is:

A smooth

B pulsating

C perfectly direct

D alternating

Explanation

Uni direction but not smooth.

Correct

Unattempted

Incorrect

Q 4/5

Q : Pulsating DC can be made smooth by using a circuit known as:

A filter

B tank

C acceptor

D all of these

Explanation

Convert pulses into constant DC.

Correct

Unattempted

Incorrect

Q 5/5

Q : Minimum number of semi-conductor diodes required for full wave rectification are:

A 1

B 2

C 3

D 4

Explanation

Full wave rectifier diagram.

QUIZZES

Practice Test 68

5 Questions

5 min

Topics

Specially designed p-n junction, LED ,Photo diode , Photo-voltaic cell

Start Quiz

04 : 59

USAMA SOHAIL

Q 1/5 5 min Hint

Q : The light emitting diode emits light when it is:

A reverse biased

B forward biased

C both A and B

D none of these

04 : 57

USAMA SOHAIL

Q 2/5 | 5 min | Hint

Q : Light emitting diode based on:

A emission of energy in the form of photons

B Faradays law

C Ionic bonding between p-type and n-type substances

D None of these

Q : A photo diode can turn its current ON and OFF in

A micro seconds

B pico seconds

C nano seconds

D milli seconds

04 : 55

USAMA SOHAIL

Q 4/5 5 min Hint

Q : A light emitting diode (LED) emits light only when:

A reverse biased

B forward biased

C unbiased

D none of these

1 2 3 4 5

04 : 53

USAMA SOHAIL

Q 5/5 5 min Hint

Q : Which diode works at reverse biasing?

A LED

B photovoltaic cell

C photodiode

D silicon diode

1 2 3 4 5

Correct

Unattempted

Incorrect

Q 1/5

Q : The light emitting diode emits light when it is:

A reverse biased

B forward biased

C both A and B

D none of these

Explanation

LED operates in forward biased.

Practice Test 68

Correct

Unattempted

Incorrect

Q 2/5

Q : Light emitting diode based on:

A emission of energy in the form of photons

B Faradays law

C Ionic bonding between p-type and n-type substances

D None of these

Explanation

Working of LED.

1 2 3 4 5

Practice Test 68

Correct

Unattempted

Incorrect

Q 3/5

Q : A photo diode can turn its current ON and OFF in

A micro seconds

B pico seconds

C nano seconds

D milli seconds

Correct
Unattempted
Incorrect
Q 4/5

Q : A light emitting diode (LED) emits light only when:

A reverse biased

B forward biased

C unbiased

D none of these

Correct

Unattempted

Incorrect

Q 5/5

Q : Which diode works at reverse biasing?

A LED

B photovoltaic cell

C photodiode

D silicon diode

QUIZZES

Practice Test 69

5 Questions

5 min

Topics

Transistor, Transistor as an amplifier, Transistor as a switch, npn and pnp transistor, Current flowing in a n-p-n transisitor

Start Quiz

Q : The transistors with various combinations are widely used as switch in

A rectifier

B computers

C generators

D transformers

04 : 56

USAMA SOHAIL

Q 2/5 5 min Hint

Q : The reverse current gain of transistor is given by

A majority charge carriers

B minority charge carriers

C both (a) and (b)

D none of these

1 2 3 4 5

04 : 54

USAMA SOHAIL

Q 3/5 | 5 min | Hint

Q : In n – p – n transistor current does not flow in the direction from:-

A emitter to collector

B emitting base

C base to collector

D collector to emitter

1 2 3 4 5

Q 4/5 5 min Hint

Q : For normal operation of a transistor, the E – B junction is always;

A forward biased

B reverse biased

C not biased

D no effect of biasing

04 : 52

USAMA SOHAIL

Q 5/5 | 5 min | Hint

Q : A device which converts low voltage or current to high voltage or current is called

A transformer

B AC-generator

C rectifier

D amplifier

1 2 3 4 5

Correct

Unattempted

Incorrect

Q 1/5

Q : The transistors with various combinations are widely used as switch in

A rectifier

B computers

C generators

D transformers

Explanation

Transistor are widely used in computers.

Correct
Unattempted
Incorrect
Q 2/5

Q : The reverse current gain of transistor is given by

A majority charge carriers

B minority charge carriers

C both (a) and (b)

D none of these

Practice Test 69

Correct

Unattempted

Incorrect

Q 3/5

Q : In n – p – n transistor current does not flow in the direction from:-

A emitter to collector

B emitting base

C base to collector

D collector to emitter

Explanation

Base to collector is reverse biased.

Correct
Unattempted
Incorrect
Q 4/5

Q : For normal operation of a transistor, the E – B junction is always;

A forward biased

B reverse biased

C not biased

D no effect of biasing

Explanation

Normal biasing configuration diagram.

Correct

Unattempted

Incorrect

Q 5/5

Q : A device which converts low voltage or current to high voltage or current is called

A transformer

B AC-generator

C rectifier

D amplifier

QUIZZES

Practice Test 70

5 Questions

5 min

Topics

Operational Amplifier, Operational Amplifier , Characteristics of Operational amplifier

Start Quiz

04 : 59

USAMA SOHAIL

Q 1/5 | 5 min | Hint

Q : An op-amp can be used as

A comparator

B night switch

C inverting and non inverting amplifier

D all of these

1 2 3 4 5

04 : 57

USAMA SOHAIL

Q 2/5 5 min Hint

Q : The whole amplifier is integrated on a

A small aluminium chips

B small silicon chips

C very large silicon chips

D very large germanium chips

1 2 3 4 5

04 : 56

USAMA SOHAIL

Q 3/5 5 min Hint

Q : The open loop gain of op-amp is expressed as

A $A_{OL} = V_o + V_i$

B $A_{OL} = \frac{V_o + V_i}{2}$

C $A_{OL} = \frac{V_o}{V_+ - V_-}$

D $A_{OL} = \frac{V_+ - V_-}{V_o}$

04 : 54

USAMA SOHAIL

Q 4/5 5 min Hint

Q : The open loop gain loop is of the order of

A 10^4

B 10^5

C 10^9

D 10^6

1 2 3 4 5

04 : 53

USAMA SOHAIL

Q 5/5 5 min Hint

Q : The open loop gain of the amplifier is order of:

A 10^2

B 10^8

C 10^5

D 10^{12}

1 2 3 4 5

Correct

Unattempted

Incorrect

Q 1/5

Q : An op-amp can be used as

A comparator

B night switch

C inverting and non inverting amplifier

D all of these

Explanation

Applications of Op-amp.

Correct

Unattempted

Incorrect

Q 2/5

Q : The whole amplifier is integrated on a

A small aluminium chips

B small silicon chips

C very large silicon chips

D very large germanium chips

Explanation

Integrated on small chip.

Correct

Unattempted

Incorrect

Q 3/5

Q : The open loop gain of op-amp is expressed as

A $A_{OL} = V_o + V_i$

B $A_{OL} = \dfrac{V_o + V_i}{2}$

C $A_{OL} = \dfrac{V_o}{V_+ - V_-}$

D $A_{OL} = \dfrac{V_+ - V_-}{V_o}$

Explanation

Definition of open loop gain.

Correct

Unattempted

Incorrect

Q 4/5

Q : The open loop gain loop is of the order of

A 10^4

B 10^5

C 10^9

D 10^6

Explanation

Very large open loop gain.

Practice Test 70

USAMA SOHAIL

Correct

Unattempted

Incorrect

Q 5/5

Q : The open loop gain of the amplifier is order of:

A 10^2

B 10^8

C 10^5

D 10^{12}

1 2 3 4 5

QUIZZES

Practice Test 71

5 Questions

5 min

Topics

Amplification by Op - Amp, Op- Amp as inverting amplifier

Start Quiz

04 : 59

USAMA SOHAIL

Q 1/5 | 5 min | Hint

Q : An op-amp has input terminals namely:

A inverting(-) input

B non-inverting (+) input

C both A and B

D none of these

1 2 3 4 5

04 : 57

USAMA SOHAIL

Q 2/5 | 5 min | Hint

Q : The operational amplifier is:

A a high gain amplifier

B a high -power amplifier

C a high resistance amplifier

D a low resistance amplifier

1 2 3 4 5

Q : If $R_1 = \infty$ and $R_2 = 0$ then gain of non-inverting amplifier is

A 0

B 1

C infinity

D maximum

Q : In relation $G = -\frac{R_2}{R_1}$, the negative sign shows the output signal is

A 180° out of phase with input signal

B 90° out of phase

C 180° in phase with input signal

D no phase change

04 : 53

USAMA SOHAIL

Q 5/5 | 5 min | Hint

Q : The voltage gain of an inverting amplifier is:

A $-\frac{R_1}{R_2}$

B $\frac{R_1}{R_2}$

C $-\frac{R_2}{R1}$

D $1+\frac{R_2}{R1}$

Correct
Unattempted
Incorrect
Q 1/5

Q : An op-amp has input terminals namely:

A inverting(-) input

B non-inverting (+) input

C both A and B

D none of these

Explanation

Two input terminals.

Correct

Unattempted

Incorrect

Q 2/5

Q : The operational amplifier is:

A a high gain amplifier

B a high -power amplifier

C a high resistance amplifier

D a low resistance amplifier

Explanation

Gain of 10^5 order.

Correct

Unattempted

Incorrect

Q 3/5

Q : If $R_1 = \infty$ and $R_2 = 0$ then gain of non-inverting amplifier is

A 0

B 1

C infinity

D maximum

Correct

Unattempted

Incorrect

Q 4/5

Q : In relation $G = -\frac{R_2}{R_1}$, the negative sign shows the output signal is

A 180° out of phase with input signal

B 90° out of phase

C 180° in phase with input signal

D no phase change

Correct

Unattempted

Incorrect

Q 5/5

Q : The voltage gain of an inverting amplifier is:

A $-\frac{R_1}{R_2}$

B $\frac{R_1}{R_2}$

C $-\frac{R_2}{R1}$

D $1+\frac{R_2}{R1}$

QUIZZES

Practice Test 72

2 Questions

5 min

Topics

Op-Am as non-inverting amplifier

Start Quiz

04 : 59

USAMA SOHAIL

Q 1/2 5 min Hint

Q : For non-inverting amplifier if $R_1 = \infty$ ohm and $R_2 = 0$ ohm, then gain of amplifier is:

A -1

B zero

C +1

D Infinite

1 2

Q 2/2 5 min Hint

Q : The gain of non-inverting amplifier is:

A $1+\frac{R_2}{R_1}$

B $1+\frac{R_1}{R_2}$

C $-\frac{R_2}{R_1}$

D $-\frac{R_1}{R2}$

Correct

Unattempted

Incorrect

Q 1/2

Q : For non-inverting amplifier if $R_1 = \infty$ ohm and $R_2 = 0$ ohm, then gain of amplifier is:

A -1

B zero

C +1

D Infinite

Explanation

$$G = 1 + \frac{R_2}{R_1} = 1 + \frac{o}{\infty} = 1$$

Correct

Unattempted

Incorrect

Q 2/2

Q : The gain of non-inverting amplifier is:

A $1+\frac{R_2}{R_1}$

B $1+\frac{R_1}{R_2}$

C $-\frac{R_2}{R_1}$

D $-\frac{R_1}{R2}$

Explanation

Gain relation.

QUIZZES

Practice Test 73

5 Questions

5 min

Topics

Op-Amp as a Comparator

Start Quiz

04 : 58

USAMA SOHAIL

Q 1/5 5 min Hint

Q : Op-amp usually requires two power supplies of

A unequal voltage and but of opposite polarity

B unequal voltage and but of same polarity

C equal voltage and but of same polarity

D equal voltage and but of opposite polarity

04 : 57

USAMA SOHAIL

Q 2/5 5 min Hint

Q : The value of LDR depends upon the

A intensity of heat

B intensity of sound

C intensity of light

D intensity of voltage applied

1 2 3 4 5

04 : 55

USAMA SOHAIL

Q 3/5 | 5 min | Hint

Q : When we are using op-amp as comparator and $V_- < V_+$ then

A $V_o = +V_{CC}$

B $V_o < -V_{CC}$

C $V_o = -V_{CC}$

D $V_o > -V_{CC}$

Q : The automatic working of streets light is due to

A inductor

B capacitor

C comparator

D rectifier

Q : Automatic functioning of streetlight can be done by the use of:

A inductor

B capacitor

C comparator

D soft substances

Correct
Unattempted
Incorrect
Q 1/5

Q : Op-amp usually requires two power supplies of

A unequal voltage and but of opposite polarity

B unequal voltage and but of same polarity

C equal voltage and but of same polarity

D equal voltage and but of opposite polarity

Explanation

To supply $+V_{CC}$ and $-V_{CC}$ voltages.

Correct
Unattempted
Incorrect
Q 2/5

Q : The value of LDR depends upon the

A intensity of heat

B intensity of sound

C intensity of light

D intensity of voltage applied

Explanation

LDR depends upon light.

Practice Test 73

USAMA SOHAIL

Correct

Unattempted

Incorrect

Q 3/5

Q : When we are using op-amp as comparator and $V_- < V_+$ then

A $V_o = +V_{CC}$

B $V_o < -V_{CC}$

C $V_o = -V_{CC}$

D $V_o > -V_{CC}$

Explanation

Output is equal to greater input voltage.

Correct

Unattempted

Incorrect

Q 4/5

Q : The automatic working of streets light is due to

A inductor

B capacitor

C comparator

D rectifier

Explanation

OP-amp working as comparator.

Practice Test 73

USAMA SOHAIL

Correct

Unattempted

Incorrect

Q 5/5

Q : Automatic functioning of streetlight can be done by the use of:

A inductor

B capacitor

C comparator

D soft substances

1 2 3 4 5

QUIZZES

Practice Test 74

5 Questions

5 min

Topics

Digital Systems, Fundamental Logic Gates

Start Quiz

Q : The values 1 and 0 are designated as:

A binary values

B continouous values

C decimal values

D none of these

04 : 57

USAMA SOHAIL

Q 2/5 5 min Hint

Q : If both the inputs given to a gate are 1, such that the output is 0 then it is:

A NAND gate

B NOR gate

C XOR gate

D all of these

1 2 3 4 5

04 : 56

Q 3/5 5 min Hint

Q : NOR gate is used to invert the output of

A OR gate

B AND gate

C XOR gate

D NAND gate

04 : 55

USAMA SOHAIL

4/5 5 min Hint

Q : The electric circuit which gives the inversion

A XNOR gate

B OR gate

C AND gate

D NOT gate

1 2 3 4 5

04 : 53

USAMA SOHAIL

Q 5/5 5 min Hint

Q : $X = \overline{A + B}$ is the mathematical notation for

A OR gate

B NOR gate

C NAND gate

D AND gate

1 2 3 4 5

Correct

Unattempted

Incorrect

Q 1/5

Q : The values 1 and 0 are designated as:

A binary values

B continouous values

C decimal values

D none of these

Explanation

Boolean variable can take up 1 or 0 as binary value.

Correct

Unattempted

Incorrect

Q 2/5

Q : If both the inputs given to a gate are 1, such that the output is 0 then it is:

A NAND gate

B NOR gate

C XOR gate

D all of these

Explanation

By truth tables.

Correct

Unattempted

Incorrect

Q 3/5

Q : NOR gate is used to invert the output of

A OR gate

B AND gate

C XOR gate

D NAND gate

Explanation

NOT gate at the output of OR gate.

Correct

Unattempted

Incorrect

Q 4/5

Q : The electric circuit which gives the inversion

A XNOR gate

B OR gate

C AND gate

D NOT gate

Correct

Unattempted

Incorrect

Q 5/5

Q : $X = \overline{A + B}$ is the mathematical notation for

A OR gate

B NOR gate

C NAND gate

D AND gate

QUIZZES

Practice Test 75

3 Questions

5 min

Topics

Applications of Gates in Control System

Start Quiz

04 : 58

USAMA SOHAIL

Q 1/3 5 min Hint

Q : During day time, when light is falling upon LDR, R_L is:

A large

B semiconductor

C insulator

D none

1 2 3

04 : 57

USAMA SOHAIL

Q 2/3 | 5 min | Hint

Q : Logic gates can control some physical parameters like

A temperature, pressure

B current, voltage

C resistance, inductance

D capacitance, impedance

1 2 3

04 : 56

Q 3/3 5 min Hint

Q : The devices which are required to convert various physical quantities into electric voltage are called

A filters

B rectifiers

C amplifiers

D sensors

Correct
Unattempted
Incorrect
Q 1/3

Q : During day time, when light is falling upon LDR, R_L is:

A large

B semiconductor

C insulator

D none

Explanation

Show low resistance.

Correct

Unattempted

Incorrect

Q 2/3

Q : Logic gates can control some physical parameters like

A temperature, pressure

B current, voltage

C resistance, inductance

D capacitance, impedance

Explanation

Control physical parameters by sensors and gates.

Correct

Unattempted

Incorrect

Q 3/3

Q : The devices which are required to convert various physical quantities into electric voltage are called

A filters

B rectifiers

C amplifiers

D sensors

Explanation

Definition of sensors.

QUIZZES

Practice Test 76

5 Questions

5 min

Topics

Relative Motion

Start Quiz

04 : 59

USAMA SOHAIL

Q 1/5 5 min Hint

Q : Mathematical foundations for electromagnetic waves were provided by:

A Hertz

B Ampere

C Maxwell

D Newton

1 2 3 4 5

04 : 57

USAMA SOHAIL

Q 2/5 5 min Hint

Q : All motions are:

A Uniform

B Relative

C Absolute

D Variable

1 2 3 4 5

04 : 56

USAMA SOHAIL

Q 3/5 5 min Hint

Q : Newton's laws of motion are valid:

A In non-inertial frame

B In inertial frame

C Both (a) and (b)

D None of these

04 : 55

USAMA SOHAIL

4/5 5 min Hint

Q : The concept of direction is purely:

A Relative

B Absolute

C Relative to the motion

D None of these

1 2 3 4 5

04 : 53

USAMA SOHAIL

Q 5/5 5 min Hint

Q : Any coordiante system relative to which results are taken is known as:

A Zero point

B Frame of reference

C Infinity point

D None of these

1 2 3 4 5

Correct
Unattempted
Incorrect
Q 1/5

Q : Mathematical foundations for electromagnetic waves were provided by:

A Hertz

B Ampere

C Maxwell

D Newton

Explanation

Maxwell equations.

Practice Test 76

USAMA SOHAIL

Correct

Unattempted

Incorrect

Q 2/5

Q : All motions are:

A Uniform

B Relative

C Absolute

D Variable

Explanation

Motion with respect of certain frame of reference.

Correct
Unattempted
Incorrect
Q 3/5

Q : Newton's laws of motion are valid:

A In non-inertial frame

B In inertial frame

C Both (a) and (b)

D None of these

Explanation

Non-accelerating frame.

Correct
Unattempted
Incorrect
Q 4/5

Q : The concept of direction is purely:

A Relative

B Absolute

C Relative to the motion

D None of these

Explanation

With respect to frame of reference.

Practice Test 76

Correct

Unattempted

Incorrect

Q 5/5

Q : Any coordiante system relative to which results are taken is known as:

A Zero point

B Frame of reference

C Infinity point

D None of these

1 2 3 4 5

QUIZZES

Practical Test 77

5 Questions

5 min

Topics

Bohr's Model of hydrogen atom, Quantized radii ,Quantized energy, Hydrogen emission of spectrum

Start Quiz

04 : 59

USAMA SOHAIL

Q 1/5 5 min Hint

Q : The numerical value of ground state energy of an electron in an orbit is the measure of:

A Excitation energy

B Excitation potential

C Ionization energy

D None of these

04 : 57

USAMA SOHAIL

Q 2/5 5 min Hint

Q : The radius of 1^{st} Bohr's orbit for hydrogen is:

A 0.053 nm

B 0.53 nm

C 0.53 m

D None of these

1 2 3 4 5

04 : 56

USAMA SOHAIL

Q 3/5 5 min Hint

Q : According to Bohr's 2^{nd} postulate, angular momentum of an electron in one of its allowed orbit is given by

A $mr = \frac{nh}{2\pi}$

B $mv = \frac{nh}{2\pi}$

C $mvr = \frac{h}{2\pi}$

D $mvr = \frac{nh}{2\pi}$

04 : 54

USAMA SOHAIL

Q 4/5 5 min Hint

Q : If electron jumps from second orbit to first orbit in hydrogen atom it emits photon of:

A 3.40 eV

B 10.20 eV

C 13.6 eV

D 3.8 eV

1 2 3 4 5

04 : 53

USAMA SOHAIL

Q 5/5 | 5 min | Hint

Q : Which spectrum of hydrogen carries highest frequency?

A Lyman

B Balmer

C Pashen

D Bracket

1 2 3 4 5

Correct

Unattempted

Incorrect

Q 1/5

Q : The numerical value of ground state energy of an electron in an orbit is the measure of:

A Excitation energy

B Excitation potential

C Ionization energy

D None of these

Explanation

Energy required to take it to infinity.

Correct

Unattempted

Incorrect

Q 2/5

Q : The radius of 1^{st} Bohr's orbit for hydrogen is:

A 0.053 nm

B 0.53 nm

C 0.53 m

D None of these

Explanation

$r_1 = 0.053nm$

Correct

Unattempted

Incorrect

Q 3/5

Q : According to Bohr's 2^{nd} postulate, angular momentum of an electron in one of its allowed orbit is given by

A $mr = \frac{nh}{2\pi}$

B $mv = \frac{nh}{2\pi}$

C $mvr = \frac{h}{2\pi}$

D $mvr = \frac{nh}{2\pi}$

Explanation

Bohr's theory.

Correct
Unattempted
Incorrect
Q 4/5

Q : If electron jumps from second orbit to first orbit in hydrogen atom it emits photon of:

A $3.40\ eV$

B $10.20\ eV$

C $13.6\ eV$

D $3.8\ eV$

Explanation

$\Delta E = -13.6 - (-3.40) = -10.20 eV$

Practical Test 77

Correct

Unattempted

Incorrect

Q 5/5

Q : Which spectrum of hydrogen carries highest frequency?

A Lyman

B Balmer

C Pashen

D Bracket

Explanation

Belongs to ultraviolet radiations.

1 2 3 4 5

QUIZZES

Practice Test 78

5 Questions

5 min

Topics

X-Rays, Properties and uses of X-Rays

Start Quiz

04 : 59

USAMA SOHAIL

Q 1/5 5 min Hint

Q : When x-rays are passed through aluminium sheets, what happens to their thickness:

A Decreases

B Increases

C Remain the same

D None of these

1 2 3 4 5

04 : 57

USAMA SOHAIL

Q 2/5 | 5 min | Hint

Q : The emission of photons by a metal when electrons are incident is called

A Compton effect

B Diffraction

C X-rays production

D All of these

1 2 3 4 5

04 : 56

USAMA SOHAIL

Q 3/5 | 5 min | Hint

Q : During production of x-rays, when the cathode is heated by the filament it emits

A Protons

B Electrons

C Neutrons

D All of these

1 2 3 4 5

04 : 54

USAMA SOHAIL

Q 4/5 5 min Hint

Q : X-ray diffraction reveals that these are

A particle type

B wave type

C both wave and particle

D none of above

Q : In CAT scanning, X-ray is passed through patient body is shape of

A Straight line

B Fanned out array

C Circular array

D Rectangular array

Practice Test 78

USAMA SOHAIL

Correct

Unattempted

Incorrect

Q 1/5

Q : When x-rays are passed through aluminium sheets, what happens to their thickness:

A Decreases

B Increases

C Remain the same

D None of these

Explanation

No effect on thickness.

1 2 3 4 5

Correct

Unattempted

Incorrect

Q 2/5

Q : The emission of photons by a metal when electrons are incident is called

A Compton effect

B Diffraction

C X-rays production

D All of these

Explanation

X-ray production.

Correct

Unattempted

Incorrect

Q 3/5

Q : During production of x-rays, when the cathode is heated by the filament it emits

A Protons

B Electrons

C Neutrons

D All of these

Explanation

Emission of electrons by heated filament.

Correct

Unattempted

Incorrect

Q 4/5

Q : X-ray diffraction reveals that these are

A particle type

B wave type

C both wave and particle

D none of above

Explanation

Diffraction is wave behaviour.

Correct

Unattempted

Incorrect

Q 5/5

Q : In CAT scanning, X-ray is passed through patient body is shape of

A Straight line

B Fanned out array

C Circular array

D Rectangular array

Explanation

Thin fan shaped beam.

QUIZZES

Practice Test 79

5 Questions

5 min

Topics

Uncertainty within the atom

Start Quiz

04 : 59

USAMA SOHAIL

Q 1/5 5 min Hint

Q : The duration of a laser pulse is 10^{-8} sec. The uncertainty in its energy will be:

A $\Delta E = \frac{h}{\Delta t}$

B $\Delta E = h\ \Delta t$

C $\Delta E = \frac{\Delta t}{h}$

D None of these

1 2 3 4 5

04 : 57

USAMA SOHAIL

Q 2/5 5 min Hint

Q : The duration of a laser pulse is 10^{-8} see. The uncertainty in its energy will be:

A 10.500×10^{-62} J

B 6.625×10^{-28} J

C 6.625×10^{-26} J

D 1.050×10^{-28} J

1 2 3 4 5

04 : 56

USAMA SOHAIL

Q 3/5 | 5 min | Hint

Q : The maximum uncertainty in the measurement of position of an electron inside the nucleus is of the order of

A 10^{-8}m

B 10^{-12}m

C 10^{-14}m

D 10^{-16}m

Q 4/5 5 min Hint

Q : The speed of electrons in atom is

A Less than speed of light

B Greater than speed of light

C Equal to speed of light

D None of these

04 : 53

USAMA SOHAIL

Q 5/5 5 min Hint

Q : For an atom Δx is given as $5 ´ 10^{-11}$ m. The electron to remain inside the nucleus then its vibration velocity should be

A less than the speed of light

B equal to the speed of light

C greater than the speed of light

D double than the speed of light

1 2 3 4 5

Correct

Unattempted

Incorrect

Q 1/5

Q : The duration of a laser pulse is 10^{-8} sec. The uncertainty in its energy will be:

A $\Delta E = \frac{h}{\Delta t}$

B $\Delta E = h\,\Delta t$

C $\Delta E = \frac{\Delta t}{h}$

D None of these

Explanation

$(\Delta E)(\Delta t) = h$

Correct

Unattempted

Incorrect

Q 2/5

Q : The duration of a laser pulse is 10^{-8} see. The uncertainty in its energy will be:

A 10.500×10^{-62} J

B 6.625×10^{-28} J

C 6.625×10^{-26} J

D 1.050×10^{-28} J

Explanation

$$\Delta E = \frac{h}{\Delta t} = \frac{6.625 \times 10^{-34} Js}{10^{-8} s} = 6.625 \times 10^{-26} J$$

Correct

Unattempted

Incorrect

Q 3/5

Q : The maximum uncertainty in the measurement of position of an electron inside the nucleus is of the order of

A 10^{-8}m

B 10^{-12}m

C 10^{-14}m

D 10^{-16}m

Explanation

Diameter of nucleus (10^{-14}m)

Correct

Unattempted

Incorrect

Q 4/5

Q : The speed of electrons in atom is

A Less than speed of light

B Greater than speed of light

C Equal to speed of light

D None of these

Explanation

$\Delta v = 1.46 \times 10^7 ms^{-1}$

Correct

Unattempted

Incorrect

Q 5/5

Q : For an atom Δx is given as $5 ' 10^{-11}$ m. The electron to remain inside the nucleus then its vibration velocity should be

A less than the speed of light

B equal to the speed of light

C greater than the speed of light

D double than the speed of light

Explanation

$\Delta v = 7.3 \times 10^{10} ms^{-1}$

QUIZZES

Practice Test 80

5 Questions

5 min

Topics

Laser, Helium-Neon laser , Uses of laser

Start Quiz

04 : 59

Q 1/5 5 min Hint

Q : Reflecting mirrors in laser is used to:

A Further stimulation

B For producing more energetic lasers

C Both (a) and (b)

D None of these

04 : 57

USAMA SOHAIL

Q 2/5 5 min Hint

Q : In He-Ne laser, the laser action is produced by:

A Ne only

B He-Ne both

C Electrons of He

D Electrons of Ne

04 : 56

USAMA SOHAIL

Q 3/5 5 min Hint

Q : Life time of metastable states is:

A 10^{-6} sec or more

B 10^{-3} sec or more

C 10^{-5} sec or more

D None of these

1 2 3 4 5

04 : 55

USAMA SOHAIL

Q 4/5 5 min Hint

Q : The idea of laser device was first introduced by C.H. Townes and Authers Schowlan is:

A 1972

B 1965

C 1958

D 1913

Q 5/5 5 min Hint

Q : Helium – Neon laser discharge tube contains neon

A 15%

B 25%

C 82%

D 85%

Correct

Unattempted

Incorrect

Q 1/5

Q : Reflecting mirrors in laser is used to:

A Further stimulation

B For producing more energetic lasers

C Both (a) and (b)

D None of these

Explanation

Stimulate more atoms.

Correct

Unattempted

Incorrect

Q 2/5

Q : In He-Ne laser, the laser action is produced by:

A Ne only

B He-Ne both

C Electrons of He

D Electrons of Ne

Explanation

Ne is lasing medium.

Correct

Unattempted

Incorrect

Q 3/5

Q : Life time of metastable states is:

A 10^{-6} sec or more

B 10^{-3} sec or more

C 10^{-5} sec or more

D None of these

Explanation

$(10^{-3}sec)$ time to reside in metastable state.

Correct

Unattempted

Incorrect

Q 4/5

Q : The idea of laser device was first introduced by C.H. Townes and Authers Schowlan is:

A 1972

B 1965

C 1958

D 1913

Explanation

Laser idea.

Correct

Unattempted

Incorrect

Q 5/5

Q : Helium – Neon laser discharge tube contains neon

A 15%

B 25%

C 82%

D 85%

Explanation

15% Ne

QUIZZES

Practice Test 81

5 Questions

5 min

Topics

Mass defect and binding energy

Start Quiz

04 : 59

USAMA SOHAIL

Q 1/5 5 min Hint

Q : The energy required to breaks up helium nuclear into two protons and two neutron is:

A 28.2 eV

B 28.2 KeV

C 28.2 MeV

D None of these

1 2 3 4 5

04 : 57

USAMA SOHAIL

Q 2/5 | 5 min | Hint

Q : The mass defect is defined as

A $\Delta m = Zm_p + (A + Z)m_n - m_{neucleus}$

B $\Delta m = Zm_p + (A - Z)m_n - m_{neucleus}$

C $\Delta m = Zm_p + (A - Z)m_n + m_{neucleus}$

D $\Delta m = Zm_p + (A + Z)m_n + m_{neucleus}$

04 : 55

USAMA SOHAIL

Q 3/5 5 min Hint

Q : The mass defect per nucleon is called

A Binding energy of nucleus

B Packing fraction

C Energy fraction

D Binding fraction

1 2 3 4 5

04 : 54

USAMA SOHAIL

Q 4/5 5 min Hint

Q : Binding energy for deuteron nucleus is given by:

A 2.8 MeV

B 2.23 MeV

C 2.28 MeV

D 2.25 MeV

04 : 52

USAMA SOHAIL

Q 5/5 | 5 min | Hint

Q : Geiger counter can be used to detect:

A charge

B mass

C $\frac{Charge}{Mass}$ ratio

D nuclear radiation

1 2 3 4 5

Correct

Unattempted

Incorrect

Q 1/5

Q : The energy required to breaks up helium nuclear into two protons and two neutron is:

A 28.2 eV

B 28.2 KeV

C 28.2 MeV

D None of these

Practice Test 81

Correct
Unattempted
Incorrect
Q 2/5

Q : The mass defect is defined as

A $\Delta m = Zm_p + (A + Z)m_n - m_{neucleus}$

B $\Delta m = Zm_p + (A - Z)m_n - m_{neucleus}$

C $\Delta m = Zm_p + (A - Z)m_n + m_{neucleus}$

D $\Delta m = Zm_p + (A + Z)m_n + m_{neucleus}$

Correct

Unattempted

Incorrect

Q 3/5

Q : The mass defect per nucleon is called

A Binding energy of nucleus

B Packing fraction

C Energy fraction

D Binding fraction

Correct

Unattempted

Incorrect

Q 4/5

Q : Binding energy for deuteron nucleus is given by:

A 2.8 MeV

B 2.23 MeV

C 2.28 MeV

D 2.25 MeV

Correct

Unattempted

Incorrect

Q 5/5

Q : Geiger counter can be used to detect:

A charge

B mass

C $\frac{Charge}{Mass}$ ratio

D nuclear radiation

QUIZZES

Practice Test 82

5 Questions

5 min

Topics

Radioactivity, Nuclear transmutation

Start Quiz

04 : 58

USAMA SOHAIL

Q 1/5 5 min Hint

Q : Which of the following have similar nature as that of electrons:

A $\beta - rays$

B $\gamma - rays$

C $\alpha - rays$

D $x - rays$

1 2 3 4 5

04 : 57

USAMA SOHAIL

Q 2/5 5 min Hint

Q : Which of the reaction shows the emission of $\alpha-particles$:

A $_{Z}X^{A} \rightarrow _{Z-1}X^{A-4}$

B $_{Z}X^{A} \rightarrow _{Z+1}X^{A}$

C $_{Z}X^{A} \rightarrow _{Z-2}X^{A-4}$

D None of these

04 : 56

USAMA SOHAIL

Q 3/5 | 5 min | Hint

Q : Radioactivity was discovered by

A Huygens

B Henry Becquerel

C Marie Curie

D Einstein

1 2 3 4 5

04 : 54

USAMA SOHAIL

Q 4/5 5 min Hint

Q : When α-particle is emitted from any nucleus, its mass number _____ and its charge number ______.

A increase by 2, increases by 2

B decrease by 4, increases by 2

C decreases by 4, decreases by 2

D decreases by 4, decreases by 4

Q 5/5 5 min Hint

Q : The mass of β particle is equal to the mass of

A proton

B neutron

C electron

D photon

Correct

Unattempted

Incorrect

Q 1/5

Q : Which of the following have similar nature as that of electrons:

A $\beta - rays$

B $\gamma - rays$

C $\alpha - rays$

D $x - rays$

Correct

Unattempted

Incorrect

Q 2/5

Q : Which of the reaction shows the emission of $\alpha-particles$:

A $_{Z}X^{A} \rightarrow {}_{Z-1}X^{A-4}$

B $_{Z}X^{A} \rightarrow {}_{Z+1}X^{A}$

C $_{Z}X^{A} \rightarrow {}_{Z-2}X^{A-4}$

D None of these

Correct
Unattempted
Incorrect
Q 3/5

Q : Radioactivity was discovered by

A Huygens

B Henry Becquerel

C Marie Curie

D Einstein

Correct

Unattempted

Incorrect

Q 4/5

Q : When α-particle is emitted from any nucleus, its mass number _____ and its charge number ______.

A increase by 2, increases by 2

B decrease by 4, increases by 2

C decreases by 4, decreases by 2

D decreases by 4, decreases by 4

Correct
Unattempted
Incorrect
Q 5/5

Q : The mass of β particle is equal to the mass of

A proton

B neutron

C electron

D photon

QUIZZES

Practice Test 83

5 Questions

5 min

Topics

Half life

Start Quiz

Q : The reciprocal of decay constant (λ) of a radioactive element is:

A Average life

B Half life

C Mean life

D None of these

Q 2/5 5 min Hint

Q : The decay constant can be defined as

A $\lambda = -\dfrac{\frac{\Delta N}{N}}{\Delta t}$

B $\lambda = -\dfrac{\frac{N}{\Delta N}}{\Delta t}$

C $\lambda = \dfrac{\frac{N}{\Delta N}}{\Delta t}$

D $\lambda = \dfrac{\frac{\Delta N}{N}}{\Delta t}$

04 : 56

USAMA SOHAIL

Q 3/5 5 min Hint

Q : The ratio of the fraction of decaying atoms per unit time is called

A Half life

B Decay time

C Decay constant

D Decay element

1 2 3 4 5

04 : 55

USAMA SOHAIL

Q 4/5 5 min Hint

Q : Half-life of a radioactive element $T_{1/2}$ is given by:

A 0.693^{λ}

B $\frac{0.693}{\lambda}$

C $\frac{\lambda}{0.693}$

D $\frac{1}{0.693\lambda}$

Q : The decay constant of a radioactive element depends upon

A nature of material

B temperature of material

C pressure on material

D dimensions of material

Correct

Unattempted

Incorrect

Q 1/5

Q : The reciprocal of decay constant (λ) of a radioactive element is:

A Average life

B Half life

C Mean life

D None of these

Correct

Unattempted

Incorrect

Q 2/5

Q : The decay constant can be defined as

A $\lambda = -\dfrac{\frac{\Delta N}{N}}{\Delta t}$

B $\lambda = -\dfrac{\frac{N}{\Delta N}}{\Delta t}$

C $\lambda = \dfrac{\frac{N}{\Delta N}}{\Delta t}$

D $\lambda = \dfrac{\frac{\Delta N}{N}}{\Delta t}$

Correct

Unattempted

Incorrect

Q 3/5

Q : The ratio of the fraction of decaying atoms per unit time is called

A Half life

B Decay time

C Decay constant

D Decay element

Correct

Unattempted

Incorrect

Q 4/5

Q : Half-life of a radioactive element $T_{1/2}$ is given by:

A 0.693^{λ}

B $\frac{0.693}{\lambda}$

C $\frac{\lambda}{0.693}$

D $\frac{1}{0.693\lambda}$

Correct

Unattempted

Incorrect

Q 5/5

Q : The decay constant of a radioactive element depends upon

A nature of material

B temperature of material

C pressure on material

D dimensions of material

QUIZZES

Practice Test 84

5 Questions

5 min

Topics

Interaction of radiations with matter

Start Quiz

04 : 59

USAMA SOHAIL

Q 1/5 | 5 min | Hint

Q : When a certain radiation passes through matters it lose energy due to:

A. Ionization of material atoms due to direct collision

B. Ionization of material atoms due to electrostatic

C. Excitation of material atoms

D. Any of these

04 : 57

USAMA SOHAIL

Q 2/5 5 min Hint

Q : The magnitude of range of radiation particle through matter depends upon:

A its mass

B its charge

C Its mass and charge

D all of the above

1 2 3 4 5

04 : 56

USAMA SOHAIL

Q 3/5 | 5 min | Hint

Q : The intensity I_o of a beam after passing through solids is given by:

A $I = I_0 e^{-\mu x}$

B $I = I_0 x$

C $I = I_1 e^{\mu x}$

D $I = I_0 x^2$

04 : 54

USAMA SOHAIL

Q 4/5 5 min Hint

Q : The range of particle depends upon the factor

A Charge, mass and energy of particle

B Density of medium

C Ionization potential of the atoms

D All of these

04 : 53

USAMA SOHAIL

Q 5/5 | 5 min | Hint

Q : Which particle has larger range in air:

A α -particle

B γ - particle

C β -particle

D neutron

Practice Test 84

USAMA SOHAIL

Correct

Unattempted

Incorrect

Q 1/5

Q : When a certain radiation passes through matters it lose energy due to:

A Ionization of material atoms due to direct collision

B Ionization of material atoms due to electrostatic

C Excitation of material atoms

D Any of these

Correct
Unattempted
Incorrect
Q 2/5

Q : The magnitude of range of radiation particle through matter depends upon:

A its mass

B its charge

C Its mass and charge

D all of the above

Practice Test 84

USAMA SOHAIL

Correct

Unattempted

Incorrect

Q 3/5

Q : The intensity I_o of a beam after passing through solids is given by:

A $I = I_0 e^{-\mu x}$

B $I = I_0 x$

C $I = I_1 e^{\mu x}$

D $I = I_0 x^2$

1 2 3 4 5

Practice Test 84

USAMA SOHAIL

Correct

Unattempted

Incorrect

Q 4/5

Q : The range of particle depends upon the factor

A Charge, mass and energy of particle

B Density of medium

C Ionization potential of the atoms

D All of these

1 2 3 4 5

Correct

Unattempted

Incorrect

Q 5/5

Q : Which particle has larger range in air:

A α -particle

B γ - particle

C β -particle

D neutron

QUIZZES

Practice Test 85

5 Questions

5 min

Topics

Radiation Detectors, Wilson cloud chamber, Geiger Muller Counter, Solid state Detector

Start Quiz

Q : Examples of radiation detector case:

A Geiger Muller counter

B Wilson cloud chamber

C Solid state detector

D All of the above

04 : 57

USAMA SOHAIL

Q 2/5 | 5 min | Hint

Q : A Wilson could chamber uses

A Super heated liquid

B Vapors

C Super saturated vapors

D Saturated vapors

1 2 3 4 5

04 : 56

USAMA SOHAIL

Q 3/5 5 min Hint

Q : The fact that the super saturated vapors condense preferentially on ion is used to detect the radiation of the device is called:

A Nuclear Reactor

B G.M Counter

C Solid State Detector

D Wilson Could Chamber

04 : 55

USAMA SOHAIL

Q 4/5 5 min Hint

Q : Geiger counter can be used to detect:

A charge

B mass

C $\frac{Charge}{Mass}$ ratio

D nuclear radiation

1 2 3 4 5

04 : 54

USAMA SOHAIL

Q 5/5 5 min Hint

Q : Energy needed to produced an electron-hole pair in solid state detector is:

A 1 to 2 eV

B 3 to 4 eV

C 6 to 7

D 8 to 9 eV

Correct
Unattempted
Incorrect
Q 1/5

Q : Examples of radiation detector case:

A Geiger Muller counter

B Wilson cloud chamber

C Solid state detector

D All of the above

Practice Test 85

Correct

Unattempted

Incorrect

Q 2/5

Q : A Wilson could chamber uses

A Super heated liquid

B Vapors

C Super saturated vapors

D Saturated vapors

Correct

Unattempted

Incorrect

Q 3/5

Q : The fact that the super saturated vapors condense preferentially on ion is used to detect the radiation of the device is called:

A Nuclear Reactor

B G.M Counter

C Solid State Detector

D Wilson Could Chamber

Practice Test 85

Correct

Unattempted

Incorrect

Q 4/5

Q : Geiger counter can be used to detect:

A charge

B mass

C $\frac{Charge}{Mass}$ ratio

D nuclear radiation

Correct

Unattempted

Incorrect

Q 5/5

Q : Energy needed to produced an electron-hole pair in solid state detector is:

A 1 to 2 eV

B 3 to 4 eV

C 6 to 7

D 8 to 9 eV

QUIZZES

Practice Test 86

3 Questions

5 min

Topics

Nuclear reaction

Start Quiz

04 : 59

USAMA SOHAIL

Q 1/3 5 min Hint

Q : The capture of a neutron by a nucleus results in the formation of:

A Deutron

B Proton

C Helium

D Radio Isotope

1 2 3

04 : 57

USAMA SOHAIL

Q 2/3 5 min Hint

Q : Mass of $_1^1H$ is

A 1.0078 u

B 16.999u

C 4.000u

D 14.00034 u

1 2 3

04 : 56

USAMA SOHAIL

Q 3/3 5 min Hint

Q : Rutherford performed an experiment on the nuclear radiation in

A 1900

B 1919

C 1926

D 1912

1 2 3

Correct

Unattempted

Incorrect

Q 1/3

Q : The capture of a neutron by a nucleus results in the formation of:

A Deutron

B Proton

C Helium

D Radio Isotope

Practice Test 86

USAMA SOHAIL

Correct

Unattempted

Incorrect

Q 2/3

Q : Mass of ${}_1^1H$ is

A 1.0078 u

B 16.999u

C 4.000u

D 14.00034 u

1 2 3

Correct

Unattempted

Incorrect

Q 3/3

Q : Rutherford performed an experiment on the nuclear radiation in

A 1900

B 1919

C 1926

D 1912

QUIZZES

Practice Test 87

5 Questions

5 min

Topics

Nuclear fission, Nuclear Reactor

Start Quiz

04 : 59

USAMA SOHAIL

Q 1/5 | 5 min | Hint

Q : The process in which a heavy nucleus is broken into two lighter nuclei with the release of energy in called:

A Nuclear fusion

B Nuclear fission

C Chain reaction

D None of these

1 2 3 4 5

04 : 57

USAMA SOHAIL

Q 2/5 | 5 min | Hint

Q : The first atomic reactor was introduced by:

A Currie

B Enrico Fermi

C Newton

D Bohr

Q : During the fission reaction the amount of energy released per nucleon is about

A 0.9MeV

B 7.7MeV

C 28MeV

D 200MeV

04 : 55

USAMA SOHAIL

Q 4/5 5 min Hint

Q : The most important and vital part of a reactor is called

A Core

B Moderator

C Condenser

D Turbine

1 2 3 4 5

04 : 53

USAMA SOHAIL

Q 5/5 5 min Hint

Q : In a fast (nuclear) reactor a $^{238}_{92}U$ nucleus absorbs a fast neutron and is ultimately transformed into ______ by emitting two β particles.

A $^{235}_{92}U$

B $^{239}_{94}Pu$

C $^{208}_{82}Pb$

D $^{208}_{90}Ph$

1 2 3 4 5

Correct

Unattempted

Incorrect

Q 1/5

Q : The process in which a heavy nucleus is broken into two lighter nuclei with the release of energy in called:

A Nuclear fusion

B Nuclear fission

C Chain reaction

D None of these

Correct

Unattempted

Incorrect

Q 2/5

Q : The first atomic reactor was introduced by:

A Currie

B Enrico Fermi

C Newton

D Bohr

Correct

Unattempted

Incorrect

Q 3/5

Q : During the fission reaction the amount of energy released per nucleon is about

A 0.9MeV

B 7.7MeV

C 28MeV

D 200MeV

Practice Test 87

USAMA SOHAIL

Correct

Unattempted

Incorrect

Q 4/5

Q : The most important and vital part of a reactor is called

A Core

B Moderator

C Condenser

D Turbine

1 2 3 4 5

Correct

Unattempted

Incorrect

Q 5/5

Q : In a fast (nuclear) reactor a $^{238}_{92}U$ nucleus absorbs a fast neutron and is ultimately transformed into ______ by emitting two β particles.

A $^{235}_{92}U$

B $^{239}_{94}Pu$

C $^{208}_{82}Pb$

D $^{208}_{90}Ph$

QUIZZES

Practice Test 88

5 Questions

5 min

Topics

Fusion reaction

Start Quiz

04 : 59

Q 1/5 5 min Hint

Q : During fusion of hydrogen into helium:

A Energy is released

B Energy is absorbed

C Mass is increased due to energy absorption

D Mass is reduced due to energy released

1 2 3 4 5

04 : 57

Q 2/5 5 min Hint

Q : 1 Sv =

A 1 Gy x RBE

B 2 Gy x RBE

C 1 Gy/RBE

D RBE/1 Gy

04 : 56

USAMA SOHAIL

Q 3/5 5 min Hint

Q : 1 Curie is equal to _________ disintegration per second

A 3.7×10^{10}

B 5.7×10^{10}

C 3.7×10^{20}

D 3.7×10^{13}

Q : The energy released by fusion of two deuterons into helium nucleus is about

A 24 MeV

B 200 MeV

C 1.02 MeV

D 7.7 MeV

04 : 53

USAMA SOHAIL

Q 5/5 | 5 min | Hint

Q : Which nuclear reaction takes place in the Sun and Stars?

A fission

B chemical

C fusion

D mechanical

1 2 3 4 5

Practice Test 88

Correct

Unattempted

Incorrect

Q 1/5

Q : During fusion of hydrogen into helium:

A Energy is released

B Energy is absorbed

C Mass is increased due to energy absorption

D Mass is reduced due to energy released

Correct

Unattempted

Incorrect

Q 2/5

Q : 1 Sv =

A 1 Gy x RBE

B 2 Gy x RBE

C 1 Gy/RBE

D RBE/1 Gy

Correct

Unattempted

Incorrect

Q 3/5

Q : 1 Curie is equal to _________ disintegration per second

A 3.7×10^{10}

B 5.7×10^{10}

C 3.7×10^{20}

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Correct

Unattempted

Incorrect

Q 4/5

Q : The energy released by fusion of two deuterons into helium nucleus is about

A 24 MeV

B 200 MeV

C 1.02 MeV

D 7.7 MeV

Correct

Unattempted

Incorrect

Q 5/5

Q : Which nuclear reaction takes place in the Sun and Stars?

A fission

B chemical

C fusion

D mechanical

QUIZZES

Practice Test 89

5 Questions

5 min

Topics

Basic forces of nature

Start Quiz

04 : 59

USAMA SOHAIL

Q 1/5 5 min Hint

Q : The number of fundamental forces present in nature are:

A 3

B 2

C 5

D 4

1 2 3 4 5

04 : 57

USAMA SOHAIL

Q 2/5 | 5 min | Hint

Q : A pair of quark and anti quark makes a:

A Meson

B Bargon

C Photon

D Proton

1 2 3 4 5

04 : 56

Q 3/5

5 min

Hint

Q : Electromagnetic and weak forces were unified by

A Weinberg

B Glashow

C Abdus Salam

D None of these

04 : 55

USAMA SOHAIL

Q 4/5 5 min Hint

Q : Dr. Abdus Salam unified electromagnetic force and

A weak nuclear force

B strong nuclear force

C magnetic force

D gravitational force

04 : 54

USAMA SOHAIL

Q 5/5 5 min Hint

Q : Particles that experience the strong nuclear force

A hadrons

B leptons

C photons

D quarks

1 2 3 4 5

Practice Test 89

USAMA SOHAIL

Correct

Unattempted

Incorrect

Q 1/5

Q : The number of fundamental forces present in nature are:

A 3

B 2

C 5

D 4

1 2 3 4 5

Practice Test 89

Correct

Unattempted

Incorrect

Q 2/5

Q : A pair of quark and anti quark makes a:

A Meson

B Bargon

C Photon

D Proton

1 2 3 4 5

Correct
Unattempted
Incorrect
Q 3/5

Q : Electromagnetic and weak forces were unified by

A Weinberg

B Glashow

C Abdus Salam

D None of these

Practice Test 89

Correct

Unattempted

Incorrect

Q 4/5

Q : Dr. Abdus Salam unified electromagnetic force and

A weak nuclear force

B strong nuclear force

C magnetic force

D gravitational force

Practice Test 89

Correct

Unattempted

Incorrect

Q 5/5

Q : Particles that experience the strong nuclear force

A hadrons

B leptons

C photons

D quarks

1 2 3 4 5

QUIZZES

Practice Test 90

5 Questions

5 min

Topics

Building blocks of matter

Start Quiz

04 : 59

USAMA SOHAIL

Q 1/5 5 min Hint

Q : A proton consists of quarks which are:

A two up, one down

B one up, two down

C all up

D all down

1 2 3 4 5

04 : 57

USAMA SOHAIL

Q 2/5 | 5 min | Hint

Q : Types of quark are:

A 2

B 4

C 6

D 8

1 2 3 4 5

04 : 56

USAMA SOHAIL

3/5 5 min Hint

Q : Which of the following belong to “hadrons” group

A proton

B electron

C muons

D neutrinos

1 2 3 4 5

Q : Three quarks make a

A proton

B electron

C baryon

D neutron

04 : 54

USAMA SOHAIL

Q 5/5 5 min Hint

Q : Electrons are:

A hadrons

B leptons

C quarks

D baryons

1 2 3 4 5

Correct

Unattempted

Incorrect

Q 1/5

Q : A proton consists of quarks which are:

A two up, one down

B one up, two down

C all up

D all down

Correct

Unattempted

Incorrect

Q 2/5

Q : Types of quark are:

A 2

B 4

C 6

D 8

Correct

Unattempted

Incorrect

Q 3/5

Q : Which of the following belong to “hadrons” group

A proton

B electron

C muons

D neutrinos

Practice Test 90

Correct

Unattempted

Incorrect

Q 4/5

Q : Three quarks make a

A proton

B electron

C baryon

D neutron

1 2 3 4 5

Practice Test 90

Correct

Unattempted

Incorrect

Q 5/5

Q : Electrons are:

A hadrons

B leptons

C quarks

D baryons